

**THE CHARACTERISTICS OF PATIENTS WHO WAITED
AN INDETERMINATE PERIOD OF TIME FOR
CORONARY ARTERY BYPASS GRAFT SURGERY**

by

Jocelyn Marie Reimer-Kent

A Thesis
Submitted to the Faculty of Graduate Studies
in Partial Fulfillment of the Requirements
for the Degree of

MASTER OF NURSING

School of Nursing
University of Manitoba
Winnipeg, Manitoba
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ABSTRACT

Coronary artery bypass graft (CABG) surgery is presently a common therapeutic modality that is offered to patients when conventional and/or interventional management of their coronary artery disease has been exhausted. In country's, such as Canada, with government administered health care this treatment is not available on demand. This imbalance between supply (health care resources) and demand (patients requiring CABG surgery) has resulted in a phenomenon called the indeterminate waiting period.

This retrospective, descriptive survey was predicated on the Lazarus Stress, Appraisal, and Coping paradigm delineating a personal and situational profile of patients who waited an indeterminate period of time for CABG surgery, and exploring their cognitive appraisal of that experience.

Self-report as well as medical record data was collected from a convenience sample of 30 subjects using the Indeterminate Waiting Period Survey (IWPS). This two-part data collection instrument was developed by the researcher to describe the sample within the selected theoretical constructs and concepts. Descriptive statistics were applied once qualitative data had been content analyzed and numerically coded, along with the quantitative data.

The data revealed that threat appraisal was the overwhelming perception of this time frame and 12 separate difficulties were identified. A few subjects appraised the waiting period as a challenge by identifying seven benefits. Subjects used diverse methods to manage the waiting period and the problem-focused/emotion-focused coping mode dichotomy was used to categorize this data. Thirteen problem-focused and 12 emotion-focused coping strategies were identified from content analysis. Most subjects coped with the stimulus-stressor from a repertoire of problem-focused as well as emotion-focused strategies. Problem-focused coping strategies were predominantly used, whereas emotion-focused strategies were predominantly suggested. Subjects recalled that their quality of life had been impacted during this time frame, at least to some extent.

From this preliminary work several implications for nursing practice and suggestions for future research are presented.

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TABLE OF CONTENTS

	Page
Abstract	iii
Acknowledgements	iv
List of Figures	vii
List of Tables	viii
Chapter One: Introduction	1
Statement of the problem	3
Purpose of the study	8
Research questions	8
Importance of the study	8
Assumption	9
Summary	9
Chapter Two: Theoretical Framework and Literature Review	10
Theoretical overview of stress, uncertainty, appraisal, and coping	10
Extraneous processes or personal factors within an indeterminate waiting period for CABG surgery	15
Demographic characteristics	16
Biophysical characteristics	23
Uncertainty or situational factors within an indeterminate waiting period for CABG surgery	28
Waiting period characteristics	31
The process of cognitive appraisal within an indeterminate waiting period for CABG surgery	38
Primary appraisal	39
Secondary appraisal	46
Adaptation	53
Summary	57
Chapter Three: Methodology	59
Research Design	59
Population, Sample, and Sample Selection	60
Procedure	61
Data Collection Instrument	62
Data Analysis	67
Ethical Considerations	68
Summary	69

Chapter Four: Results	70
Research question one	71
Demographic characteristics	71
Biophysical characteristics	74
Research question two	76
Waiting period characteristics	76
Research question three	82
Primary appraisal	82
Secondary appraisal	88
Reappraisal	95
Adaptation	101
Summary	102
Chapter Five: Discussion	103
Personal factor profile	103
Demographic characteristics	104
Biophysical characteristics	106
Situational factor profile	107
Waiting period characteristics	108
Cognitive appraisal process	112
Primary appraisal	112
Secondary appraisal	125
Reappraisal	140
Adaptation	144
Limitations	151
Implications for nursing practice	152
Recommendations for future research	155
Summary	158
References	160
Appendices	178
Appendix A: Cover letter from the Acting Section Head of Cardiovascular and Thoracic Surgery	178
Appendix B: Letter of invitation and explanation from the investigator	179
Appendix C: Telephone protocol and consent	181
Appendix D: Data collection instrument	183
Appendix E: Data collection instrument coding sheet	190

LIST OF FIGURES

Figure	Page
1. Construct and Concept Level of Theory	12

LIST OF TABLES

Table	Page
1. Variables Measured by the IWPS	63
2. Distribution of Respondents According to Age	71
3. Waiting Period and Current Employment Status	73
4. Reasons for Waiting Period and Current Unemployment	73
5. Summary of the Demographic and Biophysical Characteristics	75
6. Distribution of Respondents According to Actual Waiting Time	76
7. Distribution of Respondents According to Expected Waiting Time	77
8. Distribution of Respondents According to Whether Expected Waiting Time was Realized	78
9. Distribution of Respondents According to Admission Cancellations, Surgical Postponements, and Surgical Cancellations	79
10. Summary of the Waiting Period Events	81
11. Distribution of Respondents According to Number of Identified Waiting Period Difficulties	82
12. Distribution of Respondents According to Identified Waiting Period Difficulties	84
13. Distribution of Respondents According to Overall Waiting Period Difficulties	85
14. Distribution of Respondents According to Number of Identified Waiting Period Benefits	86
15. Distribution of Respondents According to Identified Waiting Period Benefits	87
16. Distribution of Respondents According to Overall Waiting Period Benefits	88
17. Distribution of Respondents According to Number of Identified Waiting Period Coping Strategies	89

18. Coping Mode for 25 Separate Coping Strategies	90
19. Distribution of Respondents According to Identified Waiting Period Coping Strategies	92
20. Distribution of Respondents According to Overall Waiting Period Coping Strategies	93
21. Distribution of Respondents According to Best Mode of Coping Used During the Waiting Period	94
22. Distribution of Respondents According to Other Mode of Coping Used During the Waiting Period	94
23. Distribution of Respondents According to Overall Mode of Coping Used During the Waiting Period	95
24. Distribution of Respondents According to Number of Waiting Period Suggestions/Advice	96
25. Coping Mode for 18 Separate Waiting Period Suggestions	96
26. Distribution of Respondents According to Given Waiting Period Suggestions/Advice	98
27. Distribution of Respondents According to Number of Times Each Suggestion was Given	99
28. Distribution of Respondents According to Best Mode of Coping Suggested for the Waiting Period	100
29. Distribution of Respondents According to Other Mode of Coping Suggested for the Waiting Period	100
30. Distribution of Respondents According to Overall Mode of Coping Suggested for the Waiting Period	101
31. Distribution of Respondents According to the Impact of the Waiting Period on Quality of Life	102

CHAPTER ONE

Introduction

Coronary artery disease (CAD) ranks as the leading cause of death in industrialized nations, yet, the mortality rate attributed to this disease process is actually on the decline in Canada (Nair, Colburn, McLean, & Petrasovits, 1989). Coronary artery bypass graft (CABG) surgery has contributed to this decline (Nair, et al., 1989) by revolutionizing the treatment for CAD (Clancy, Wey, & Guinn, 1984; Stanford, 1982).

The broad goals of CABG surgery include: relieving angina (Allen, 1990; Rapaport, 1982); improving left ventricular function (Miller, Bruce, & Dodge, 1978); improving functional capacity (Stanton, Jenkins, Savageau, & Thurer, 1984); returning to work (Allen, 1990); and in a select population of individuals, prolonging life (Allen, 1990; Cutter, Oberman, Kouchoukos, & Rogers, 1982; Mayou & Bryant, 1987). CABG surgery is purely a palliative procedure intended to improve the quality of life for the CAD patient (Flynn & Frantz, 1987; Gilliss, Sparacino, Gortner, & Kenneth, 1985). Quality of life, however, is a multidimensional variable with diverse conceptual and operational definitions (Cohen, 1982). This may be the reason why disparate results have been found when this concept has been examined in the CABG surgery population. Gortner et al. (1989), Kornfeld, Heller, Frank, Wilson, and Malm (1982), and Penckofer and Holm (1984) all found quality of life to be improved for the CABG surgery patient postoperatively. Mayou and Bryant (1987), O'Connor (1983),

and Ramshaw and Stanley (1981), however, found contrary findings when conducting similar research.

What is known about the goals of CABG surgery is that total relief of angina occurs in an estimated 60 to 70% of patients and marked improvement in angina is experienced by 80 to 90% of patients (Rapaport, 1982). Long-term, follow-up studies indicate that angina recurs at an annual rate of approximately five percent (Hurst et al., 1978; Rapaport, 1982). Miller et al. (1978) examined postoperative left ventricular function and noted a striking increase in maximal cardiac output and restored, segmental left ventricular wall motion abnormalities during symptom-limited maximal exercise testing. Improvements in functional capacity have also been noted in the postoperative phase. Investigators have studied physical, social (Allen, Becker, & Swank, 1990; Stanton, Jenkins, Savageau, & Thurer, 1984), leisure (Allen et al., 1990), and sexual functioning (Stanton, Jenkins, Savageau, & Thurer, 1984), finding all these dimensions improved after CABG surgery. Postoperative unemployment rates, though, remain high and research findings point to the length of preoperative unemployment as an associated factor (Boulay, David, & Bourassa, 1982; Gundle, Reeves, Tate, Raft, & McLaurin, 1980; Gutmann et al., 1982; Hammerstein, DeRouen, English, & Dodge, 1978). Patients who present with left main stem stenosis as well as those with severe triple vessel disease are a subpopulation of CABG surgery patients who can expect this procedure to enhance their longevity (Alderman et al., 1982; Cutter et al., 1982; Gersh et al., 1989; Hurst et al., 1978).

CABG surgery is now a common therapeutic modality (Carr & Powers, 1986; King & Parrinello, 1988; Stanford, 1982) evidenced by a dramatic

increase, over the past decade, in the number of procedures performed each year (Stanley & Frantz, 1988; Stanton, Jenkins, Savageau, Harken, & Aucoin, 1984). Morgan and Cohen (1990) forecast that by the end of 1990, 10,000 CABG procedures will have been performed in Canada. This would be a national increase of approximately 3,500 cases in seven years (Morgan & Cohen, 1990). On a provincial basis, between 1984 and 1985, 676 operations on the vessels of the heart took place in Manitoba (Statistics Canada, 1989). A conservative estimate for the CABG procedure alone, has been cited at \$14,500 (Canadian) per case (Morgan & Cohen, 1990). This figure translates into an annual cost of approximately two million dollars or one percent of the total Manitoba health care budget (Manitoba Statistics, 1985-86).

Statement of the Problem

The CABG surgery patient is a consumer of a medical commodity. The law of economics, whereby an increase in demand results in an increase in supply, however, does not apply when it comes to universal or "free" health care. An imbalance has been created between patients requiring CABG surgery and surgical resources (Nord, 1990; Stanford, 1982). The government has cut health care funding in an attempt to control health care spending and this fiscal restraint has led to bed closures (Sullivan, 1990) and capped CABG procedures by some hospitals (Barber, 1989). Zero growth strategies, along with the skyrocketing, escalating costs of medical technology (Sullivan, 1990) are accentuating the imbalance between supply and demand. As a means of dealing with this problem, scarce, surgical resources are rationed by attaching to the CABG procedure a queue or waiting list (Gray, Hampton, Bernstein, Kosecoff, & Brook, 1990; Jacobs & Hart, 1990; Nord, 1990; Sadler, 1988;

Sullivan, 1990). This has resulted in a multifactorial phenomenon known as the indeterminate waiting period. There are several factors and trends that contribute to and/or exacerbate the problem and will, herein, be addressed.

Recent advances in interventional cardiology, along with multiple improvements in surgical techniques have led to a changing CABG surgery patient profile. Currently, there are more high-risk, gravely ill patients presenting for urgent or emergent CABG surgery (Califf et al., 1988; Christakis et al., 1989; Gersh et al., 1989; Naunheim et al., 1988). This trend is having a dramatic "domino" effect on the waiting list as these individuals warrant immediate treatment and the waiting patient is "bumped" from having imminent surgery. This practice not only lengthens the time elective, stable patients wait, it also increases the possibility of admission and/or surgery postponements and/or cancellations. Neither patients nor health care professionals have control over this aspect of the waiting problem and the blame falls on the lack of health care funding.

Another variable contributing to the waiting problem is age. As age increases so does the incidence of CAD (Statistics Canada, 1989). Advances in medicine and technology are cited as contributing to an overall lengthening lifespan, ultimately resulting in an increase in the incidence of chronic illnesses (Craig & Edwards, 1983; Mengel, 1982). Patients with advanced chronological age are no longer considered unsuitable candidates for this operation (Bhattacharya, Teskey, Cohen, Kim, & Barwinsky, 1984; Gortner, Rankin, & Wolfe, 1988; Naunheim et al., 1988). As a result, over the past decade, there has been an increase in the average age of CABG surgery patients (Bhattacharya et al., 1984; Christakis et al., 1989; Gortner, Rankin, & Wolfe,

1988; Morgan & Cohen, 1990). Population bursts such as the "baby boomer generation" also pose a problem. Many of these individuals are now reaching the age when CAD first becomes prevalent and as this population ages a greater number of individuals will become prime candidates for CABG surgery.

As stated earlier, CABG surgery does not cure the atherosclerotic disease process. CAD can be ameliorated in some patients by lifestyle changes and/or risk factor abatement. Currently, there is no known cure for this disease that can spread within the native coronary circulation as well as within the grafted vessels (Campeau et al., 1984; Hurst et al., 1978; Kroncke et al., 1988; Shaffer, Schulkerst, & Wexler, 1991). Grondin et al. (1989) places the occlusion rate of a saphenous vein graft at approximately 12 to 20% in the first year and as high as 50% at ten years. Within ten years of an original CABG procedure 30% of patients will require reoperation. Currently, at the Ottawa Heart Institute, of the 800 CABG procedures performed there each year, ten to 15% are repeat operations (Morgan & Cohen, 1990). The need to reoperate on patients is placing an added strain on limited surgical resources.

Nord (1990) lists several potential costs associated with waiting. These include: individual and family suffering; and a financial strain on society, in terms of increased health care consumption by waiting patients, loss of individual productivity, and the possibility of permanent disability. A health care cost that is often overlooked, yet, directly pertains to the waiting problem is the fact that some hospitals repeat coronary angiography, prior to CABG surgery on all patients who have waited six months or more. The progressive nature of CAD is given as the rationale for this medical practice. Although this invasive investigation is the blue-print that guides the surgical procedure (Rapaport,

1982), it costs an estimated \$400 (Canadian) (S. Hodge, personal communication, May 31, 1991) and carries an associated risk of morbidity and mortality (0.1 to 0.2% fatality) (Levin, 1982; Rapaport, 1982; Stason & Fineberg, 1982), which is independent of the number of vessels that are diseased (Weinstein & Stason, 1982). This added health care expenditure, along with the other factors presented contributes to and/or complicates the waiting phenomenon.

To bring the situation to the public's attention, the popular press run stories describing the injustice of the waiting period (Brunt, 1987; Dona, 1989; Engman, 1987; Walker, 1989; Webber, 1989). Maclean's magazine ran a cover story entitled "Sick to Death", in which Canadian medical cost cutting was blamed for lengthening waiting lists and a toll of deaths among patients who could not survive long enough to receive the surgery they needed (Barber, 1989). Alternately, Morgan and Cohen (1990) accuse the news media of sensationalizing the waiting problem and needlessly adding to the unrealistic expectations that the public has regarding health care.

The CABG surgery patient's waiting period begins at the time of surgical consultation. It is at this time that the patient accepts the recommendation for surgery. This consultation is arranged by a referring cardiologist, when it is deemed that conventional and/or interventional cardiology has been exhausted in terms of symptom relief and/or myocardial protection (Alderman et al., 1982; Clancy et al., 1984; Lawrie et al., 1982; Naunheim et al., 1988). Surgery is arranged by the surgeon and patients are slated into available operating time on the basis of an informal sorting criteria that is based on many historical, angiographic, and clinical variables (Kennedy et al., 1982), such as symptom

severity and/or the likelihood that the patient will encounter an early ischemic event (Naylor, Baigrie, Goldman, & Basinski, 1990). There is no standard time frame for this waiting period. Jacobs and Hart's (1990) Canadian survey, of CABG surgery waiting times, found a time lapse from zero days to one year between booking and actually admitting the patient to hospital for surgery. The Quebec Health Ministry has recently allocated \$15 million to tertiary cardiology in an attempt to decrease the waiting time for CABG surgery to an average of eight weeks (Charbonneau, 1991). Clinical experience as well as recent field work findings of the phenomenon indicate that although CABG surgery patients know that some waiting is inevitable, this time frame for many is filled with uncertainty and stress as they begin to realize that the waiting period is indeterminate (Reimer-Kent, 1990).

When examining the waiting problem more closely, it soon becomes evident that there is a plethora of opinions about this phenomenon. Research addressing the problem, however, is lacking. Currently, only speculations about this patient population can be made. Data needs to be generated that will scientifically explore and describe the nature of an indeterminate waiting period for CABG surgery. The length of waiting time as well as the patient's perception of this time frame are most likely impacted by numerous demographic and biophysical variables, and by specific events that are unique to this experience. During the waiting period patients also experience threats and/or challenges and develop unique ways of managing this time frame. To date, few research studies have documented either the stressors or coping strategies associated with an indeterminate waiting period for CABG surgery. A logical first research

step would be to generate a data base of personal and situational factors that exist for this population and explore the patient's perception of this experience.

Purpose of the Study

The purpose of this descriptive, retrospective study is to delineate a personal and situational profile of the population of patients who waited an indeterminate period of time for elective CABG surgery, and to explore their cognitive appraisal of that experience.

Research Questions

The following research questions are addressed:

1. What were the personal factors or demographic and biophysical characteristics of the patients who waited an indeterminate period of time for CABG surgery?
2. What were the situational factors or events that characterized an indeterminate waiting period for CABG surgery?
3. How was the indeterminate waiting period for CABG surgery cognitively appraised?

Importance of the Study

Because empirical evidence about an indeterminate waiting period is lacking, few nurses or other health care professionals have an appreciation of the significance of this time frame on the life of the CABG surgery patient. Quality health care, a major concern of the nursing profession, must encompass, not just the in-hospital preoperative, intraoperative, and/or postoperative phase of CABG surgery; but must extend to the pre-hospital phase known as the waiting period. Nurses must regard this phenomenon as an important component of the patient's preoperative experience and follow this

acknowledgement with a concerted investigative effort. Such an endeavor will reveal what nursing interventions are appropriate to institute that will assist this patient population through all facets of the CABG surgery experience.

This research study will establish a descriptive, scientific data base of personal and situational characteristics, and delineate how the waiting experience was cognitively appraised. An initial investigation such as this will also lay a foundation for programmatic research that will explore and explain this phenomenon.

Assumption

Waiting an indeterminate period of time for CABG surgery was a stimulus-stressor resulting in an individualized process of cognitive appraisal that was impacted by various personal and situational factors.

Summary

Many Canadians are currently waiting for elective CABG surgery and this problem is not expected to improve in the near future and may never be eliminated. Given the fact that diagnostic expertise for CAD is improving and that the general population is aging, the number of those requiring surgery is, in fact, going to increase. At the present time the health care community can only speculate about the characteristics of this population and the effect that waiting has on their lives. This retrospective, descriptive survey will generate a profile of the personal and situational factors of this population and reveal their cognitive appraisal of this time frame.

CHAPTER TWO

Theoretical Framework and Literature Review

This chapter presents an overview of the theoretical constructs that have been selected as a framework for the investigation. A synthesis of viewpoints from theory as well as research findings that apply to theory and/or the field of cardiac surgery are also presented. The literature review is organized into the following categories: (1) theoretical overview of stress, uncertainty, appraisal, and coping; (2) extraneous processes within an indeterminate waiting period for CABG surgery; (3) uncertainty within an indeterminate waiting period for CABG surgery; and (4) cognitive appraisal within an indeterminate waiting period for CABG surgery.

Theoretical Overview of Stress, Uncertainty, Appraisal, and Coping

The concept "stress" originated in the field of physics and engineering, where it meant elasticity and was not incorporated into the disciplines of medicine or biology until the 20th century (Hinkle, 1974). In spite of the wide spread interest in this phenomenon, scientists have been unable to agree on a conceptual definition (Lazarus & Launier, 1978). Clarke (1984 a) and Lyon and Werner (1987) published critiques of the literature on different models of stress. Their analyses revealed that in the stimulus model, stress is seen as an independent variable, whereas in the response model, this concept is seen as a dependent variable. These earlier static models postulated a linear cause and effect relationship between stimulus and response (Roskies & Lazarus, 1980). Stressful circumstances, however, do not take their toll on a passive individual,

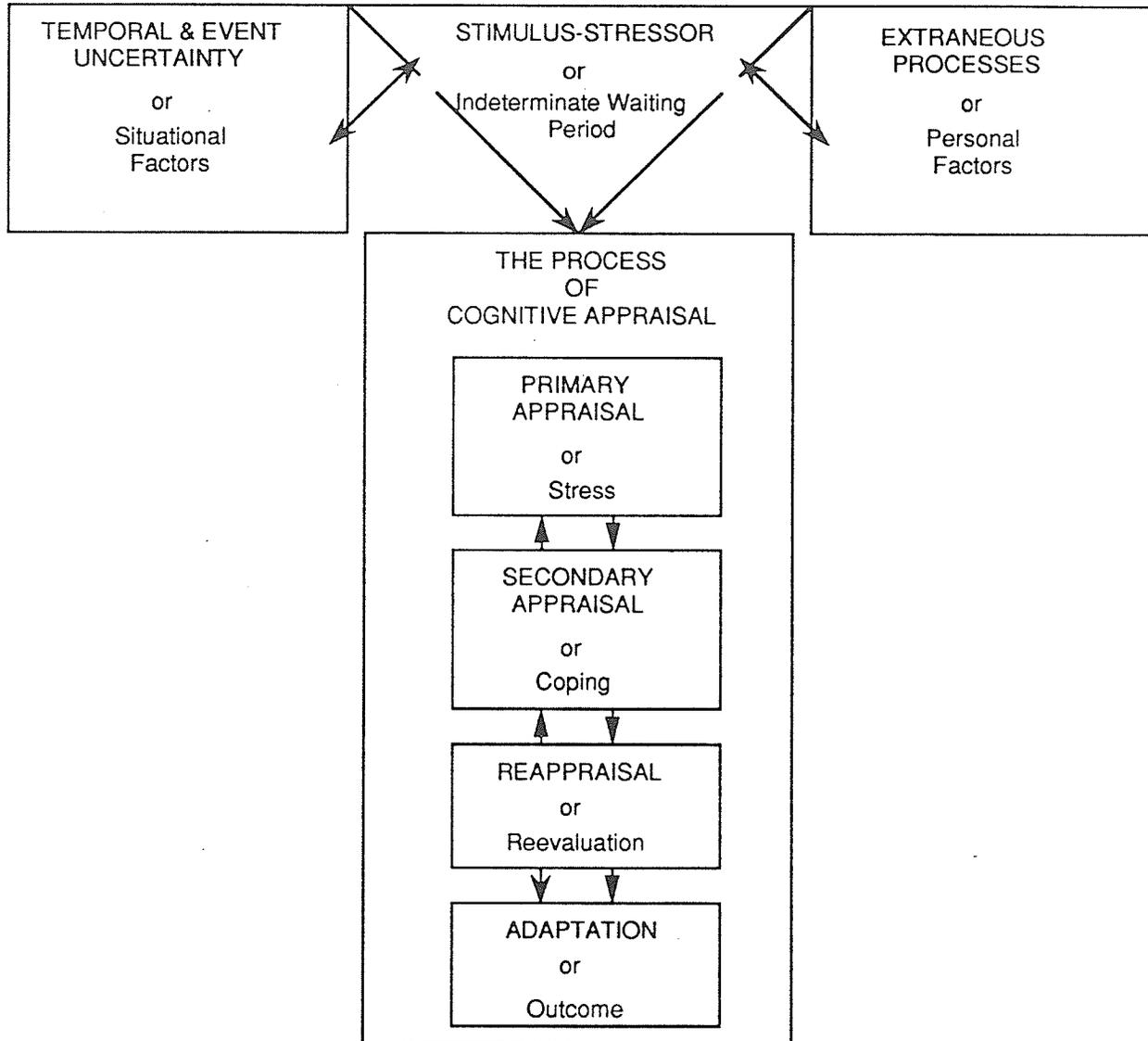
as is implicitly assumed by stimulus-response definitions of stress, but on an individual who is appraising the dynamics of a stimulus-stressor from a personal and situational perspective, while simultaneously struggling to control and master its impact (Holroyd & Lazarus, 1982).

This latter definition falls within the boundaries of the transactional model of stress (Lazarus & Folkman, 1984) that builds on Selye's work, but also takes into account a person's ability to influence the environment (Clarke, 1984 a). Stress, in this context, is seen as a dynamic process that is interactive with coping and that is effected by a mutual, reciprocal, and bidirectional person-environment relationship (Folkman & Lazarus, 1980; Lazarus & Folkman, 1984). It is this transactional or cognitive-phenomenological model of stress, uncertainty, appraisal, and coping that is the theoretical framework for this investigation. Figure 1 illustrates the construct and concept level of the theory.

Two theoretical tenets were selected to provide structural support for this study. First, there is the premise that stress and the resulting coping strategies are contextually based and contingent on numerous *extraneous processes* (i.e. mediators) that are interactive throughout the stressful encounter and that influence appraisal of the stimulus-stressor. This construct is conceptually viewed, in this investigation, as the personal factors or demographic and biophysical characteristics of the waiting CABG surgery patient.

Second, *uncertainty* is postulated to be a key antecedent in this cognitive-phenomenological model of stress and coping (Mishel, 1988; Monat, 1976; Monat, Averill, & Lazarus, 1972). This construct has also been examined in relation to time (Monat, 1976; Monat et al., 1972). From experimental work with college students exposed to a painful electric shock, Monat et al. (1972)

Figure 1. CONSTRUCT AND CONCEPT LEVEL OF THEORY



examined temporal and event uncertainty. The difference between these two uncertainties has to do with time frame and probability. With temporal uncertainty an event such as CABG surgery will definitely occur but the time frame is unknown such as with an indeterminate waiting period. With event uncertainty the indeterminacy is removed as the time that an event will occur is known. The duration of the actual indeterminate waiting period is conceptually viewed as temporal uncertainty. There are also numerous situational factors or events such as: admission and/or surgical postponements and/or cancellations; repeated cardiac catheterizations; and hospital admissions, for reasons other than CABG surgery that may occur during this period of waiting. It is believed that these events which are unique to this phenomenon are uncertainties that have an impact on cognitive appraisal.

Waiting for CABG surgery has been documented as a *stimulus-stressor* by a number of investigators, whether within a known time frame (Carr & Powers, 1986; Christopherson & Pfeiffer, 1980; Coombs, 1987; Gilliss, 1984; Kennedy, 1966; Pieper, Lepczyk, & Caldwell, 1985; Radley & Green, 1986;) or not (Dubys, 1988; Reimer-Kent, 1990). Once a stimulus-stressor is recognized by the individual, its significance to well-being is evaluated through a mental, dynamic process called *cognitive appraisal*. The dimensions of this construct include the following constructs/concepts: primary appraisal/stress; secondary appraisal/coping; reappraisal/reevaluation; and adaptation/outcome of the stressful encounter that is often referred to as the quality of life.

Stress is the individual's primary appraisal of a stimulus-stressor. The degree to which the stimulus is found to be stressful may vary between individuals as well as within an individual (Chan, 1977; Dohrenwend &

Dohrenwend, 1974). Primary appraisal asks the question "What is at stake"? (Folkman, 1984). Stress is assessed from the unique perspective of the individual into one of three categories: benign, signalling a good outcome; irrelevant, having no stake or significance in the outcome; or stressful which is subcategorized as being a harm-loss, a challenge, or a threat (Folkman, 1984; Folkman & Lazarus, 1980, 1985; Lazarus & Folkman, 1984). Harm-loss refers to injury or damage already done; challenge to the potential for personal growth, mastery, or gain; and threat to the anticipation of harm or loss, (Folkman & Lazarus, 1980, 1985). The appraisal of a stimulus-stressor, whether it be a harm-loss, a challenge, or a threat is shaped by an array of personal and situational factors (Folkman, 1984). Any situational factor can serve as a stressor (Magnusson, 1982) and those that are cloaked in uncertainty influence primary appraisal (Folkman, 1984) because they are evaluated as a threat (Clark, 1987; Mishel, 1981).

The analysis of the stimulus-stressor continues through a mediating process called secondary appraisal or coping. This concept is further defined as cognitive and/or behavioral efforts utilized to master, tolerate, or reduce specific external and/or internal demands appraised as taxing and/or exceeding individual resources (Lazarus, 1966; Lazarus & Folkman, 1984). Secondary appraisal asks the question "What can I do"? (Folkman, 1984). Coping efforts are contextually based, meaning that extraneous processes, or personal factors and uncertainty, or situational factors merge, shaping secondary appraisal (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986). Coping responses serve two main functions: (1) the problem-focused mode of coping in which the individual regulates or alters the stressful encounter by doing

something to change the source of stress and/or (2) the emotion-focused mode of coping in which the individual manages the stressful emotions arising from the encounter with the stimulus-stressor (Folkman & Lazarus, 1980, 1985; Folkman et al., 1986; Lazarus & Folkman, 1984).

The meaning of every encounter is shaped by primary and secondary appraisal (Folkman, 1984). This cyclical and interdependent process is completed with a reappraisal or reevaluation of the stimulus-stressor as well as a critique of how much stress was evoked, how effectively it was managed, and whether adaptation has occurred.

Extraneous Processes or Personal Factors Within
an Indeterminate Waiting Period for CABG Surgery

Within the framework of stress, appraisal, and coping, Lazarus (1966) envisioned this interrelated process to be contingent on various extraneous processes. Theorists in the field of stress challenge the researcher to explore both situational and personal factors such as the baseline functional level of an individual. It is proposed that personal factors surround and have the potential to impact cognitive appraisal of the stimulus-stressor, thereby, effecting both stress and coping (Billings & Moos, 1981; Endler & Edwards, 1982; Haan, 1982). Extraneous processes, in this investigation, constitute the selected demographic and biophysical characteristics believed to have an impact on the CABG surgery patient's life. Developing this profile will reveal the unique characteristics that were present during the indeterminate waiting period. Variables such as these may also influence how patients perceived and managed this stimulus-stressor (Breznitz & Goldberger, 1982; Brownsberger, 1965).

Numerous studies have examined demographic and biophysical characteristics, from both a descriptive and/or predictive focus, in relation to the preoperative and/or postoperative cardiac surgery experience as well as in relation to the theory of stress and coping. No study was found, however, that profiled the personal factors of the waiting CABG surgery patient. The demographic and biophysical variables for analysis in this study have, therefore, been selected for their ability to describe this patient population and are based on an extensive review of the theoretical and cardiac surgery literature as well as personal clinical experience.

Demographic Characteristics

Age.

Demographic characteristics are personal factors that describe the unique traits of an individual. A characteristic that has been extensively studied, from both an illness and/or theoretical perspective, is age. This variable has been positively related to severity of illness, as patients with advanced age tend to have more severe heart disease (Christman et al., 1988; Gersh et al., 1989; Gortner et al., 1988). Horneffer et al. (1987) also believe older patients present a higher surgical risk, because often they are referred to surgery only with advanced disease. Bhattacharya et al. (1984) found 90% of CABG surgery patients (n=71) aged 70 to 81 years functionally improved postoperatively. The operative mortality was 2.8% for isolated CABG surgery and this is similar to the estimated mortality rate of approximately 2.5% for patients below the age of 65 years (Califf et al., 1988). As for the elderly patient, CABG surgery has been documented to relieve their symptoms as well as to enhance their longevity (Califf et al., 1988; Gersh et al., 1989; Horneffer et al., 1987).

The relationship between age and stress, uncertainty, and/or coping has been investigated in a variety of populations and has yielded mixed results. Mishel (1984) found age to be inversely related to stress ($r = -.25$, $p < .01$), but not related to uncertainty ($r = -.10$, $p = \text{NS}$), in a sample of systematically selected medical patients ($n = 100$). Christman et al. (1988) studied age and coping behaviors in post myocardial infarction (MI) patients ($n = 70$). Elderly patients used more confrontive coping ($r = .34$, $p < .05$) and less emotion-focused coping ($r = -.43$, $p < .001$) than their younger counterparts, when measured one week after hospital discharge ($n = 62$). This trend did not change at four weeks after hospital discharge ($n = 56$). At that time, age positively correlated with confrontive coping ($r = .27$, $p < .05$) and inversely with emotion-focused coping ($r = -.43$, $p < .001$). Alternately, Folkman and Lazarus (1980) were unable to show a relationship between age and coping (Cramer's $V = .07$, $p = .04$) in a sample of middle-aged, community subjects ($n = 100$) aged 45 to 64 years.

Gender.

Gender effects have been examined in the CABG surgery population from both a physiological and psychosocial perspective. During the past 35 years the rate of CAD for men has remained at more than twice the rate for women (Nair et al., 1989). This has resulted in a disproportionate ratio of males to females presenting for CABG surgery. Kos-Munson, Alexander, Hinthorn, Gallagher, and Goetze (1988) conducted a prospective study on the relationship between preoperative perceptual, cognitive, and demographic variables and perceived level of rehabilitation in the postoperative CABG surgery patient ($n = 92$). When comparing overall scores men did significantly better than women ($t = -3.17$, $p = .002$). The relationship between gender and

recovery from CABG surgery was also examined by Zyzanski, Stanton, Jenkins, and Klein (1981). Women undergoing multiple CABG surgery did not fare as well as men, both physically and psychologically. When comparing gender differences in two vessel CABG surgery, nine percent of women (n=46) and three percent of men (n=245) reported severe, recurring chest pain and/or dyspnea after surgery. These symptoms were reported by 11% of women (n=28) and three percent of men (n=278), with three vessel CABG surgery. Findings from both these investigations concur with an insightful analysis of the literature on the physiological and psychological perspectives of women undergoing CABG surgery by Penckofer and Holm (1990). Kos-Munson et al. (1988) and Zyzanski et al. (1981) substantiate their findings with the proposition that women have atherosclerosis in smaller vessels and/or coronary artery vasospasm, a physiological gender difference that CABG surgery can not rectify. This is also purported as a hypothesis in Rankin's (1990) review of the literature on gender differences in the CABG surgery population.

Gortner et al. (1989) found gender differences in a randomized clinical trial (n=67) of three psychoeducational nursing interventions. Postcardiac surgery rehabilitation, in the form of expected and realized benefits, was the dependent variable. Sixty-nine percent of their sample were CABG surgery patients and 20% of their total sample were female. Overall, patients realized their surgical expectations. Women from both the experimental and control groups, however, were unequally represented in the nine percent of patients who realized no benefits.

Folkman and Lazarus (1980) discovered event appraisal (n=100) was not gender specific ($\chi^2=8.79$, $df=3$, $p=.03$, Cramer's $V=.08$). When differences between the sexes were examined in situations without options or recourse, however, men (n=47) not women (n=52) used more problem-focused coping. Lack of personal control is a theme in this scenario and as such it has similarities to the indeterminate waiting period for CABG surgery. These patients have no alternative but to accept the fact that waiting has become part of their surgical experience. This facet of the waiting period will be discussed in greater detail in the uncertainty section of the literature review.

Marital status.

A number of authors have addressed the reciprocity issue within the family during an illness experience (Artinian, 1989; Cozac, 1988; Gilliss, 1984; Gortner et al., 1988; Jenkins, Stanton, Savageau, Denlinger, & Klein, 1983; Jillings, 1978; Radley & Green, 1986; Stern & Pascale, 1979; Wilson-Barnett, 1981). When Artinian (1989) asked 14 family members, of seven cardiac surgery patients, what particular problems or concerns they had experienced as a result of this event, two themes emerged. One was labelled family relations and the other was labelled waiting. Both these themes were prefaced by how difficult it had been on family life to wait for the actual day and time of surgery.

Jillings (1978), in a descriptive study concerning the problem of inadequate emotional recovery after open heart surgery (n=20), identified lifestyle, degree of independence, and family relationships as preoperative variables that could potentially influence recovery. Investigators have documented the significant impact and positive role that the spouse/partner can

have on the patient's overall well-being and adaptation (Bedsworth & Molen, 1982; Gortner et al., 1988; LaMendola & Pellegrini, 1979; Mayou, Foster, & Williamson, 1978; Mishel & Murdaugh, 1987; Papadopoulos, Larrimore, Cardin, & Shelley, 1980; Reimer-Kent, 1990; Riegel, 1989; Wilson-Barnett, 1981). A well-meaning spouse/partner can also become overly protective of the patient by assuming a negative, confining role (Ross, Diwell, Marsh, Monro, & Barker, 1978; Stanley & Frantz, 1988; Stanton, Jenkins, Savageau, & Thurer, 1984; Taylor, Bandura, Ewart, Miller, & DeBusk, 1985). Ross et al. (1978) found a benefit of cardiac surgery was that patients (n=200) became less dependent on their families. The family, conversely, needed to maintain a healthy balance between the help they offered the patient during the recovery phase and the counterproductive effect of being over-protective. Nevertheless, the impact that the spouse/partner has on the MI (Mayou et al., 1978; Skelton & Dominian, 1973; Stern & Pascale, 1979) or cardiac surgery patient (Miller, Wikoff, McMahon, Garrett & Ringel, 1990) has been documented to be dependent on the quality of the relationship prior to the illness experience.

Employment status/occupation.

One of the most frequently examined demographic variables in the CABG surgery literature is employment status. This characteristic is linked to personal factors as well as to a patient's economic and social situation (Jenkins, Stanton et al., 1983; Stanton et al., 1983; Wilson-Barnett, 1981). Work status has also been used as a goal and a measure of treatment success (Bass, 1984; Brown & Rawlinson, 1977; Stanton et al., 1983). When gainfully employed there is a net benefit, to the person and to society, as the burden of economic support falls on the shoulders of the individual rather than on others (Stanton, et

al., 1983). Unemployment during a lengthy, surgical waiting period has also been cited as a potential cost to society (Howell et al., 1990; Nord, 1990).

Radley and Green (1986) interviewed couples (n=42) where the husband was awaiting CABG surgery. All subjects were under the age of 65 years. The younger age group (n=15) were between 33 and 50 years of age and the older age group (n=27) were between 51 and 65 years of age. Unemployment during the waiting period was common across these age groups. The cost associated with this aspect of the waiting period was both personal and financial and led to difficulties with the couples' ability to adjust to the waiting experience.

Zyzanski et al. (1981) found "forced" retirement to be particularly problematic to emotional and social adjustment for CABG (n=724) and valve replacement (n=225) surgery patients. This form of unemployment was not attributable to poor physical functional capacity, either before or after surgery. The negative changes that had occurred as a result of unemployment were most evident in personal relationships with spouse and family. This finding was explained with the proposition that occupational role may be central to an individual's self-concept and social support network as well as to the fact that economic conditions remained impaired for the unemployed patient.

The postoperative unemployment rate was 83% (n=30) in a study by Gundle et al. (1980) that examined which preoperative factors influenced postoperative psychosocial outcome. Reemployment was not associated with improved functional capacity, as measured by maximal exercise tolerance, but rather with preoperative variables such as symptom duration, behavior pattern, and employment status. Even though surgery was able to remove the

underlying symptoms, it was unable to correct the changes in self-image that had occurred to the majority of patients (n=19) who experienced angina for eight months or more. Time off work, preoperatively, was also a critical factor in studies by Boulay et al. (1982) and Hammerstein et al. (1978). Boulay et al. (1982) found that if subjects (n=1543) were unemployed six months or more they did not resume work, and Hammerstein et al (1978) found only 12% of subjects (n=307) off work three months or more returned after surgery.

Besides preoperative work status, many other psychosocial and physical characteristics have been explored to help explain postoperative work status (Allen, 1990). The psychosocial variables include job characteristics, personal finances, and physician advice. Clancy et al. (1984) found that if patients (n=22) perceived that their physician(s) had instructed them not to return to work, only seven (31%) returned. Physical variables include a history of a preoperative MI, left ventricular ejection fraction (LVEF), functional classification of angina, and number of significantly diseased vessels (Allen, 1990).

Comparative analysis of employment studies may be difficult as there are differences in research methods and sampling criteria as well as the prevailing assumption that all postoperative CABG surgery patients under the age of 65 years should be employed. LaMendola and Pelligrini (1979) and Rapaport (1982) strongly urge the health care professional not to assume that surgery has failed to improve the patient's quality of life if the patient does not return to work after CABG surgery. The fact that surgery is not curative, and the possibility that postoperative patients may take the opportunity to reevaluate how important employment is in achieving overall life goals were factors given to substantiate this assertion. Dracup (1982) suggests that both psychological

and physiological responses are important to consider when examining work status in the CABG surgery population. The research findings that have been reviewed generate support for this proposition.

The demographic variables presented in this section are some of the personal factors that may characterize the waiting CABG surgery population and are, therefore, important to document. Apart from these factors, success achieved by CABG surgery is also influenced by numerous biophysical variables such as the condition of the coronary arteries and myocardium (Pilowsky, Spence, & Waddy, 1979). These personal factors are characteristics from a physiological perspective that would complete the profile of potential extraneous processes.

Biophysical Characteristics

The natural history of CAD shows excessive morbidity and mortality to be linked to a number of important prognostic indicators for the CABG surgery patient. These baseline characteristics include: severity of angina (Cutter et al., 1982; Kornfeld et al., 1982; Pryor et al., 1987); poor left ventricular function (Bounous et al., 1988; Califf, et al., 1988; Gersh, et al., 1989; Kennedy et al., 1982; Pryor et al., 1987); number and location of stenosed coronary arteries, specifically left main stem and/or three-vessel disease (Cutter, et al., 1982; Kennedy et al., 1982; Pryor et al., 1987); a previous MI (Cutter, et al., 1982; Pryor et al., 1987); as well as age and sex (Pryor, et al., 1987).

Angina severity.

Angina is considered to be the most common limiting factor in patients with CAD (Selzer & Cohn, 1972). As such, it is often described as being central chest pain, discomfort or pressure usually of short duration; possibly associated

with a transient sensation of "impending doom", along with other symptoms such as dyspnea and/or exhaustion; precipitated by emotional and/or physical stress; variable in frequency and intensity; and alleviated by rest and/or nitroglycerin (Mayou, 1973; Parisi, 1982; Selzer & Cohn, 1972). To help assess patient disability, a simple functional classification has been recommended by the New York Heart Association (NYHA), that has been extensively used as a nomenclature for grading the severity of angina (Selzer & Cohn, 1972). There are four NYHA grades proceeding from one, without limitations to physical activity to four, unable to carry on any physical activity without angina and/or angina may be present at rest (Campeau, 1976). Angina can be a frightening experience for the patient and it has the potential to impact all aspects of family and social life. Some patients may be forced to curtail activities, whereas, other patients may use this symptom to legitimize the sick role and thus allow retreat from social interaction (Kimball, 1969; Mayou, 1973; Ramshaw, & Stanley, 1981). Mayou (1973) studied the impact of angina on men (n=40) and found all subjects who experienced nocturnal angina (NYHA IV) reported that it was specifically caused by lying awake worrying about their heart condition. Preoperative angina, the threat of a heart attack, and the possibility of sudden death were concerns expressed by CABG surgery subjects during an indeterminate waiting period (Dubys, 1988; Reimer-Kent, 1990). Penckofer and Holm (1984) found the same preoperative concerns in a study on quality of life post CABG surgery (n=34). Specifically, the effects of angina interfered with their subjects' ability to have intercourse and caused them to abstain from usual household tasks and social events.

Gilliss et al. (1985) found disease progression and symptoms of angina were personal factors that contributed to the choices patients made for treatment of CAD. Seventy-one nonrandomized patients who chose CABG surgery and their families were compared with 30 patients and their families who chose medical treatment. The effects of angina were most evident in the lives of surgical candidates, with 31% of preoperative CABG surgery patients being unable to complete home tasks or responsibilities. Thirty percent were also unable to undertake any recreational activities. Family routines were also effected (62%) and shifting responsibilities (58%) were experienced. These findings concur with those of O'Connor (1983) whose investigation revealed that recreational and social activities were factors which improved after CABG surgery, once the patient was free of angina.

Naylor et al. (1990) reported on the criteria, developed by a panel of cardiologists and cardiac surgeons, for allocating priority to waiting CABG surgery patients. These experts recommend a system where the wait would be no longer than three months and the key, triage factor would be whether or not symptoms interfered with the patients quality of life.

Left ventricular function.

CABG surgery has been documented to significantly benefit CAD patients with impaired left ventricular function, as measured by LVEF (Bounous et al., 1988; Hurst et al., 1978). LVEF is a useful measure of overall left ventricular function and it is the ratio of left ventricular stroke volume to left ventricular end-diastolic volume (Kennedy et al., 1982). This percent estimate (0 to 100%) of left ventricular damage, is routinely assessed on all CABG surgery candidates during their preoperative cardiac catheterization. Although

the definition for impaired left ventricular function was found to differ between investigations, an ejection fraction of less than 40% tended to be the most frequently cited. Christakis et al. (1989) state that by the year 1986, a LVEF of less than 40% had fallen to fourth place as a predictor of operative mortality ($p < .007$). This was the case despite the fact that there was a significant increase in the number patients with impaired left ventricular function having CABG surgery. Impaired left ventricular function is often associated with symptoms of congestive heart failure (Alderman et al., 1982), leaving the patient to contend with ankle edema, dyspnea, and/or orthopnea (Hurst et al., 1978). Gersh et al. (1989) state that symptoms of left ventricular dysfunction, particularly if present at rest, can diminish the quality of life for a patient while simultaneously increasing the likelihood of having a fatal MI.

Previous MI/number of diseased arteries/left main stem disease.

Frequently the knowledge of CAD is heralded by an MI. If these patients become CABG surgery candidates, they must deal with the recuperative process of an MI as well as live with the ever-present threat of reinfarction, recurrent symptoms of left ventricular dysfunction and/or angina, along with the knowledge that their coronary anatomy contains potentially lethal stenoses. This is particularly true for patients with disease in the left main stem coronary artery. According to Naylor et al. (1990) surgical precedence should to be given to patients such as these where a large amount of myocardium is placed at risk of ischemic damage. In the past, once this type of stenosis was discovered, it was standard practice to keep the patient in hospital and operate on an urgent basis. Today, however, many of these same patients are placed on a CABG surgery waiting list for an indeterminate period.

Left ventricular function, extent and location of CAD, and severity of symptoms are the major pathophysiological issues that are addressed when deciding which patients to select for CABG surgery (Gersh et al., 1989). Prompt treatment is recommended for patients with impaired left ventricular function (LVEF <40%), multivessel CAD, left main stem CAD, and severe symptoms (NYHA class III to IV), as these are the patients with the most to benefit from revascularization (Gersh et al. 1989). The dangers of procrastinating, once CABG surgery has been deemed appropriate treatment, include worsening angina as well as increasing the chances of having an MI, and/or suddenly dying (Hurst et al., 1978).

Symptoms, whether resulting from depressed left ventricular function or from coronary artery obstructions are subjective feelings. If present and recurring symptoms can limit the patient's normal activities while simultaneously providing the patient with a reminder that the underlying disease process with its potential ramifications is still present. The fact that these sensations are subjective does not reduce their significance on the patient's life (Cohen, 1982; Cronin, 1990). This is particularly true when symptoms prevent individuals from realizing their life goals (LaMendola & Pellegrini, 1979). According to Cronin (1990), symptoms may actually hold more "meaning" than objective indicators of disease severity. If symptoms associated with this disease process are interpreted during the indeterminate waiting period as a sign of disease progression, impending MI, and/or death, it is proposed that this time frame will be a stimulus-stressor appraised as a threat.

Haan (1982) states that it is more difficult for the individual to assimilate undesirable circumstances when facing other life stressors. The findings from

the various investigations presented in this section emphasize some potential adjustment difficulties effecting the cardiac patient. Developing a descriptive profile of the waiting CABG surgery population involves documenting their personal factors or demographic and biophysical characteristics. These factors are seen as extraneous processes and antecedents to the process of cognitive appraisal. A demographic, clinical, and emotional profile will also generate questions for future research, as these characteristics have been used as independent variables in studies that have examined predictors of adjustment (Dracup, 1982).

Uncertainty or Situational Factors Within an
Indeterminate Waiting Period for CABG Surgery

In the previous section of this chapter, the theoretical and cardiac surgery literature was examined in relation to extraneous processes or personal factors believed to impact cognitive appraisal during the indeterminate waiting period for CABG surgery. Situational factors, especially those characterized by uncertainty (Lazarus & Folkman, 1984) are also considered to be antecedents that influence cognitive appraisal and which may contribute to adaptation (Nyamathi, 1990). Uncertainty may arise from ambiguous factors within the situation and may be influenced by factors from within the individual (Folkman, Schaefer, & Lazarus, 1979). Thus, situational factors and personal factors intersect at the cognitive level leaving the individual to interpret, evaluate and cope with both dimensions (Alonzo, 1979).

The construct, uncertainty, has been extensively developed by Mishel (1981, 1983, 1984, 1988) and associates (Mishel & Braden, 1987; Mishel, Hostetter, King, & Graham, 1984) in an attempt to analyze this variable's

significance on a patient's illness experience. Their work is predicated on an eclectic model of cognitive appraisal that includes the work of Lazarus and associates (Mishel, 1981). Within Mishel's framework, uncertainty is conceptually defined as a cognitive state generated by events or situations that are vague, ambiguous, unpredictable, unfamiliar, inconsistent, and/or lacking in information. Furthermore, this perceived state blocks the individual's ability to predict the outcome of the stimulus-stressor. Being in such a situation may be discomfoting and distressing (Berlyne, 1977), thereby, making adjustment or adaptation difficult (Lazarus & Folkman, 1984).

Uncertainty is considered the most devastating consequence of waiting (Lazarus & Folkman, 1984; Leavitt, 1982) and its effects are exacerbated if there is no time frame with which to reference the experience (Leavitt, 1982). This hypothesis proposes that uncertainty has an effect on cognitive appraisal. In essence, the individual is unable to evaluate the significance of the stimulus-stressor to well-being, or determine what resources are needed for anticipatory coping (Clark, 1987; Clarke, 1984 a; Lazarus & Folkman, 1984; Mishel, 1981).

As discussed earlier in this chapter, time generated uncertainty has been studied in the laboratory setting, yielding two categories that have been labelled temporal uncertainty (i.e. time frame unknown) and event uncertainty (i.e. time frame known) (Monat, 1976; Monat et al., 1972). According to Monat (1976) and Monat et al. (1972) initially temporal uncertainty will be cognitively appraised as more stressful than event uncertainty. With the passage of time, however, the reverse became apparent. The proposition to explain this finding was that different conditions of uncertainty may result in different modes of coping, and that different modes of coping may influence the degree of stress

the individual will experience as a result of uncertainty. Monat (1976) and Monat et al. (1972) demonstrated that although temporal uncertainty may be cognitively appraised as a threat, this state encouraged attention deployment, or an emotion-focused mode of coping. Vigilant coping, or a problem-focused mode of coping tended to be used during heightened arousal, as was found with event uncertainty. Attention-deployment is believed to effect primary or threat appraisal by lessening the impact of the stimulus-stressor on the individual (Monat, 1976; Monat et al., 1972).

The external validity of these laboratory experiments have been criticized (Christopherson & Pfeiffer, 1980; Lazarus & Folkman, 1984). Lazarus and Folkman (1984) suggest that their theory on uncertainty is hampered by the paucity of research, especially fieldwork, that has focused on temporal uncertainty. This weakness is strikingly evident in health-related literature. Most studies that have examined the stress of waiting for surgery have done so from an event uncertain perspective (Pieper et al., 1985; Rakoczy, 1977; Warrington & Gottlieb, 1987). This lack of empirical data may relate to difficulty in locating clinical situations that place subjects in a temporal state of uncertainty. The indeterminate waiting period, however, fits the criteria. In this situation the probability that the patient will have CABG surgery, nears 100%, yet, the patient does not know when CABG surgery, or the event will take place. This waiting period is not experienced in a vacuum and it is logical to assume that various other temporal and/or event uncertainties will be encountered throughout this time frame. This theoretical construct, therefore, has potential to help structure an investigation that will describe the situational factors within an indeterminate waiting period for CABG surgery.

Waiting Period Characteristics

Actual waiting time.

Jacobs and Hart (1990) surveyed Canadian hospitals (n=48) and found the actual waiting time for heart surgery ranged from zero to 365 days (mean=108, SD=84). For many patients this is an unbounded time frame. The literature review revealed only two investigations directly pertaining to an indeterminate waiting period for CABG surgery. Dubyts (1988) discovered from indepth, recurrent interviews (n=9) that the wait represented uncertainty. Particularly problematic was the fact that the actual length of the waiting time was unknown. This time frame also accentuated real or potential losses that the subjects felt or feared, especially in relation to their underlying illness as well as to the anticipated surgical result. A field study by Reimer-Kent (1990) explored, from the perspective of the patient and spouse/family (n=13), the phenomenon of waiting an indeterminate period of time for CABG surgery. From this preliminary data, uncertainty surfaced as a common theme across subjects. Patients referenced their waiting experience in terms of hopelessness, helplessness, powerlessness, frustration, and loss. Leavitt (1982) proposes that these are the characteristics of uncertainty within the realm of waiting. Two informal investigations were found that support this assumption. All patients in Thorne's (1985) waiting room survey, to varying degrees, found waiting an anxiety provoking aspect of health care and the meaning of this experience was one of feeling ignored and unfairly treated. Rodgers (1990) gives a personal perspective on the feelings of frustration, annoyance, and overwhelming helplessness that surfaced during a lengthy wait outside an intensive care unit (ICU).

Reimer-Kent's (1990) fieldwork also revealed that waiting, for some, brought with it feelings of being deserted, both by significant others as well as by members of the health care community. One subject summarized the experience as being "like a prisoner of war with no end in sight". These words are similar to those used by subjects with congenital and/or valvular heart disease who were waiting for surgery, in a study by Morgan (1971). Their wait was between two and four months and the patients felt like prisoners to their hearts and frustrated by their disease induced limitations.

Staying home, to be near the telephone and doing nothing but waiting caused Reimer-Kent's (1990) subjects to put their lives on hold. This aspect of waiting was also discovered by Dubyts (1988) for patients during the indeterminate waiting period for CABG surgery as well as in two investigations of the impact of cardiac transplantation, on the spouse (n=30) (Buse & Pieper, 1990) and on the family (n=20) (Mishel & Murdaugh, 1987). A number of subjects described "putting life on hold," "being on hold," or in "limbo," during the pretransplantation or waiting period. Fear of missing a telephone call from the hospital, or concern that they would be forgotten by the heart transplant team, were constant worries associated with waiting for an organ in a study by Allender, Shisslak, Kasziniak, and Copeland (1983). Morgan (1971) also found the waiting period for cardiac surgery to have an impact on patients (n=72). "No one could take this time calmly. All waited for the post to come..." (p. 42). Although it is unclear how many subjects were effected, all "who had declared how fruitless and frustrating their lives had become" before surgery were no longer depressed postoperatively (p. 42). Radley and Green (1985) discovered that CABG surgery patients (n=40) who employed the adjustment style of active-

denial/resignation, relinquished valued activities during their waiting period and replaced them with ones they considered less important. This was also the group whose preoperative quality of life had declined and who were assessed as being more anxious.

Uncertainty is believed to be intrinsic to the transplant process (Buse & Pieper, 1990; Weems & Patterson, 1989). This waiting period like the one for elective CABG surgery, is also indeterminate and could, therefore, also be termed temporal uncertainty. The other similarity between these two waiting situations is the inherent lack of control the patient has over the situation. Patients waiting an indeterminate period of time are powerless to influence the length of time they have to wait for CABG surgery (Dubys, 1988; Reimer-Kent, 1990), or for an available organ (Buse & Pieper, 1990; Mishel & Murdaugh, 1987; Weems & Patterson, 1989). Knowledge about the time frame or being able to eliminate the indeterminacy may give the patient a greater sense of security. Cassady and Altrocchi (1960) found this to be the case for female patients (n=40) awaiting general surgery.

Admission and/or surgical postponements/cancellations.

It is considered natural for individuals to try and secure control and gain mastery over their lives. It is assumed that having no control is stress inducing and that having control is stress reducing (Folkman, 1984). Lack of personal control is considered a significant factor to one's well-being (Lazarus & Folkman, 1984) and is implicated as a causal antecedent to the process of stress and coping (Johnson, Christman, & Stitt, 1985; Nyamathi, 1989). It is proposed that if a person has little or no opportunity to influence the outcome of a situation the associated emotional reaction will be negative, causing

hopelessness, loss of self-esteem, increased stress, and adjustment difficulties (Christman, 1990; Clarke, 1984 b).

Suls and Mullen (1981) examined the link between uncertainty and control and found if control over the undesirable event was uncertain, the stressfulness of the event was accentuated and subsequent illness was more likely. This finding has important implications when considering that none of the elective CABG surgery patients have control over their indeterminate waiting period. This frustrating aspect of the phenomenon is exacerbated by the fact that patients are powerless to change their situation that involves having to passively accept whatever date surgery is slated; remaining in a state of readiness in case surgery is imminent; while simultaneously being prepared for hospital admission plans, and/or even the actual surgery being postponed and/or cancelled without warning. Kennedy (1966) found that having surgery postponed caused the greatest amount of stress and was associated with emotions of anger in a retrospective examination of the experiences of subjects (n=3) who had undergone valve replacement. These feelings are similar to those expressed by patients waiting an indeterminate period of time for CABG surgery (Dubyts, 1988; Reimer-Kent, 1990). Having cardiac surgery cancelled at the last minute can also effect the family and was described by a subject in Artinian's (1989) study as an "awful" experience. The effect on the patient of having CABG surgery postponed and/or cancelled is illustrated by Barber (1989). This news article cites the four month waiting experience of a CABG surgery patient in Toronto. During this time frame, the actual surgery was postponed 11 times and eventually cancelled after 13 days awaiting the procedure in hospital. Being discharged from the hospital resulted in the

patient returning to the indeterminate waiting period. As time passed the patient began to lose the will to live, and although surgery was eventually performed, the patient died eight days thereafter. To what degree the waiting experience, with its associated situational uncertainties, contributed to this very sad case will never be known. It should, however, cause concern within the health care community, since postponing and/or cancelling the elective CABG surgery patient continues to be the practice in most hospitals across Canada.

Expected waiting time.

Another aspect of the indeterminate waiting period, that has important implications to patients' well-being, relates to unrealized expectations. This is particularly true for the expected duration of the waiting period (Reimer-Kent, 1990). Expectations regarding waiting time can be influenced by various external factors, such as news reports about the waiting period and/or internal factors, such as the patient experiencing recurrent symptoms. Jacobs and Hart (1990) discovered that Canadian hospital administrators felt an average appropriate waiting period for CABG surgery would be 54 days. In reality, the actual waiting time for CABG surgery was found to be twice as long. Patients have often stated anecdotally, that they would like to have surgery immediately. Howell et al. (1990) found that patients (n=113) who were having routine, non-cardiac, elective surgery would rather travel long distances to have their surgery immediately than wait any period of time for the procedure to be done locally.

Having unmet waiting period expectations may have an effect on the process of cognitive appraisal, especially adaptation or outcome. Gortner et al. (1989) discovered that realizing one's treatment expectations may be an important predictor of outcome in cardiac surgery patients (n=67). Cohen

(1982) also advocates determining whether patient goals have been realized as a means of measuring quality of life or outcome criteria. Quality of life has been stated as the overall goal of CABG surgery and it has been reported as the most significant outcome in the randomized Coronary Artery Surgery Study (CASS Principle Investigators and Their Associates, 1983). The importance of this dimension of adaptation bears further analysis and will, therefore, be presented in greater detail as a component of the process of cognitive appraisal.

Hospital admission(s) during the waiting period.

During the waiting period uncertainty may exist due to the fact that patients continue to live with an atherosclerotic disease process, known to have widespread effects on the vascular system and which may continue to progress within the coronary arteries (Gilliss et al., 1985; Hurst et al. 1978; Kroncke, et al., 1988; Lawrie et al., 1982). According to Webster and Christman (1988) the recurrence of angina and/or sustaining an MI increases the patient's uncertainty about the course of their CAD. Fear of impending MI and/or death are also first and foremost in the minds of many waiting CABG surgery patients (Dubys, 1988; Reimer-Kent, 1990). Nord (1990) claims that we know very little about health care consumption during the waiting period. It may be that management of CAD as well as other health-related problems require waiting patients to be admitted to hospital, not for their surgery, but rather to stabilize and/or treat a new and/or exacerbated condition. The CASS Principle Investigators and their Associates (1983) conducted a randomized prospective study comparing medical versus surgical management of CAD (n=780). Findings revealed that the need for hospitalization had a negative impact on quality of life. As well,

within the surgical group hospital admissions were primarily (71%) for cardiac reasons. Zyzanski et al. (1981) concur with this as they found that the greatest negative impact on psychosocial outcome which they measured as psychological change ($p < .001$), emotional status ($p < .01$), social adjustment ($p < .001$), and social network ($p < .01$) occurred if subjects ($n=315$) were hospitalized for cardiac reasons.

Number of cardiac catheterizations.

The progressive nature of CAD (Gilliss et al., 1985; Hurst et al. 1978; Kroncke, et al., 1988; Lawrie et al., 1982) is given as the rationale for repeating cardiac catheterizations on all patients who have waited six months or longer for CABG surgery. After an initial clinical assessment further damage or healing may occur as a result of the unpredictable nature of a disease process (Croog, Levine, & Lurie, 1968). Although cardiac catheterization defines the coronary anatomy and pathology for the surgeon, it is not without an associated risk of morbidity and/or mortality (Levin, 1982; Rapaport, 1982; Stason & Fineberg, 1982). This procedure can also be more difficult to perform in the elderly as well as in patients with advanced atherosclerosis (Levin, 1982). From clinical practice it is apparent that some patients find the procedure unpleasant and many have expressed fear and concern about undergoing this repeat test as the waiting period begins to lengthen. Repeat cardiac catheterization is a variable that is believed to increase the uncertainty during this time frame.

The situational factors discussed in this section are potential temporal and event uncertainties that characterize an indeterminate waiting period for CABG surgery. Developing such a profile would extend knowledge about important descriptors for this phenomenon as well as draw attention to

situational factors that may intersect with the personal factors that have already discussed in this literature review. Situational conditions may also form the basis for understanding and explaining the process of cognitive appraisal (Magnusson, 1982).

The Process of Cognitive Appraisal Within an
Indeterminate Waiting Period for CABG Surgery

Cognitive appraisal plays a major role in the transaction between person-environment disequilibrium (Breznitz & Goldberger, 1982) and is seen as the intervening process in stress and coping (Chan, 1977). Physiologically the cerebral cortex handles memory, symbolic representation as well as thinking and reasoning, while the subcortical areas of the brain mediate arousal. Together they form the important function of information processing (Scott, Oberst & Dropkin, 1982) or cognition. As a construct, cognitive appraisal is central to the theory of stress and coping because it serves as the final common pathway through which diverse personal and situational variables intersect and influence the outcome of a stimulus-stressor (Holroyd & Lazarus, 1982).

Although cognition may be intact it can not be assumed that the appraisal process is rational, as a matter of fact it may appear quite irrational (Holroyd & Lazarus, 1982). Nevertheless, once the stimulus-stressor and its antecedents are recognized, cognitive appraisal begins cascading, stimulating the mediating variables of primary appraisal, secondary appraisal, and reappraisal striving to achieve equilibrium or a state of adaptation for the individual (Folkman & Lazarus, 1980, 1985; Lazarus, 1966; Lazarus & Folkman, 1984).

In the previous section, the construct uncertainty was examined from the conceptual perspective of situational factors that have the potential to influence cognitive appraisal within an indeterminate waiting period for CABG surgery. It is also proposed as an antecedent to cognitive appraisal. Two investigations were found that examined the relationship between these two constructs. Christman et al. (1988) found uncertainty and emotional distress, or appraised threat to be positively and significantly related before hospital discharge ($r(68)=.50, p<.001$), one week after hospital discharge ($r(62)=.46, p<.001$) and four weeks after hospital discharge ($r(56)=.53, p<.001$) in a study of the transition from hospital to home following an MI. The impact of uncertainty on cognitive appraisal was also examined in a descriptive survey of post MI patients ($n=20$) by Webster and Christman (1988). The instruments included: the Mishel Uncertainty in Illness Scale, for perceived uncertainty; the Jalowiec Coping Scale, for secondary appraisal or coping methods; the Profile of Moods States, for primary appraisal or anxiety and depression; and the Peel Prognostic Index, for physiological severity of MI. The direction and magnitude of the correlations suggest that high levels of uncertainty were associated with affective, or emotion-focused coping strategies ($r=.47, p=.008$), whereas low levels of uncertainty were related to problem-focused coping strategies ($r=.61, p=.0003$). Although these works do not examine the waiting CABG surgery population, the results lend support to the proposition that uncertainty effects cognitive appraisal.

Primary Appraisal

The literature search included studies that specifically examined the dimensions of cognitive appraisal in relation to waiting and/or to cardiac surgery

in general. The first dimension of cognitive appraisal is primary appraisal and this construct was introduced at the beginning of this chapter. It is the mental process utilized by the individual to appraise the significance of a stimulus-stressor to well-being (Endler & Edwards, 1982; Folkman & Lazarus, 1985; Haan, 1982; Lazarus & Folkman, 1984). Between the stimulus-stressor and its effects lies the subjective, cognitive-phenomenological experience of stress itself (Breznitz & Goldberger, 1982). According to Lazarus (1974), stress plays a key role in illness. Excessive or prolonged disturbances with the body being mobilized to cope with harm or danger results in neurophysiological alterations that can precipitate disease (Lazarus, 1974; Sutterley, 1982). More specifically, stress has been cited as a culprit in the development and/or exacerbation of CAD.

The etiology of CAD is accepted as being multifactorial with stress being a contributing variable. Orth-Gomer and Ahlbom (1980) conducted a five year study of stress on men ($n=150$) between the ages of 40 and 60 years. Stress was defined as conflict; dissatisfaction; and psychological stress reaction in work, family life, and education. Controlling the risk factors: hypertension, hyperlipidemia, hyperglycemia, hyperuricemia, obesity, impaired pulmonary function, smoking, and alcohol consumption revealed the impact of stress to be six times greater in individuals with manifestations of CAD. Garrity and Klein (1975) observed patient ($n=48$) behavior during the initial five days of hospital admission following an acute MI. The independent variable, emotional response, was found to be a determinant of six-month mortality after an MI ($F=6.94$, $df=1.44$, $p \leq .05$). The importance of these findings rests with the

implication that stress may be detrimental to well-being and a contributor to CAD.

The effect of waiting, as a stimulus-stressor, on cognitive appraisal has received limited attention in the scientific literature. A Canadian study that has implications for the phenomenon of interest, however, was conducted by McKay (1989). Grounded theory was used to explore the experience of a spontaneous abortion. Waiting for the abortion process to finish was identified as one of several contingent variables that had a significant impact on the subjects. The emotional distress evoked by this experience was two-fold. The first identified stressor was the "emotional roller-coaster" resulting from waxing and waning symptoms as the abortion came to completion. The second identified stressor was the health care system. Subjects often had to wait to be accommodated for what they felt was much needed medical and/or surgical treatment, especially once the abortion was inevitable. Anger tended to be the way these parents vented their frustrations. This emotion was identified as an unnecessary burden that required extra energy to work through once the physiological abortion process was completed.

Time was also an important variable in a qualitative study on patients waiting for cardiac surgery (n=11) by Rakoczy (1977). Although this was not an indeterminate waiting period, analysis of the data revealed that during an in-hospital waiting phase, of no more than 72 hours, time affected patients' concerns. The wait, labelled the confrontation phase, involved facing the reality of impending surgery. The identified concerns in this phase were feelings of helplessness, fear of impairment, seriousness of the surgery, and fear of dying. All subjects acknowledged the existence of confrontation as a component of

their waiting experience. These concerns were time specific and greatly diminished as surgery drew near.

Carr and Powers (1986) conducted a postoperative investigation aimed at delineating the stressors associated with CABG surgery. This study was a comparative analysis of the stressfulness ratings between nurses (n=18) and patients (n=30). Out of a possible 120 points, nurses rated the stress associated with this operation significantly higher (mean=77.05) than did patients (mean=42.60). Waiting, or interval before surgery, was ranked, out of a possible 30, as number eight by patients and as number seven by nurses. For patients it also had a significant positive relationship ($r(28)=.42, p<.05$) with stress. No relationship was detected between stressor scores and the demographic variables: age, number of previous hospitalizations, and interval between cardiac catheterization and bypass surgery. A positive correlation was found between stressor score and the illness variable functional cardiac classification ($r(28)=.35, p<.05$). Nevertheless, the stressor that both groups ranked as number one was actually having the surgery.

Surgery, regardless of the specific nature of the operation, is purported to be a stressful experience (Clarke, 1984 b; Dumas & Johnson, 1972; Dumas & Leonard, 1963; Graham & Conley, 1971; Gruendemann, 1975; Hefferin, 1982; Hewitt, 1979, 1984; Ray & Fitzgibbon, 1981; Schmidt & Wooldridge, 1973; Selye, 1982; Sime, 1976; Wolfer & Davis, 1970; Ziemer, 1983). This position is supported by the fact that an operation is a planned physical assault on a person's body (Gruendemann, 1975). Brownsberger (1965) states that because heart surgery has an associated risk of death, it carries a special psychological stress. This surgery involves highly charged psychological and

material accompaniments, with an aura of danger created preoperatively, followed by a sense of being released postoperatively (Cohen, 1982). Blacher (1983) describes more precisely what the CABG surgery patient is actually facing. "Cardiac surgery provides an experiment in nature whereby patients are confronted with what the average person would interpret as dying - namely, a situation in which the heart is stopped before being operated upon. Usually the patient has an opportunity to anticipate and think about the situation" (p. 65).

Frank, Heller, and Kornfeld (1972) conducted a survey of postoperative cardiac patients. These individuals (n=792) had undergone corrective surgery for valve or congenital heart disease. The study questionnaire was designed to examine the patient's operative experience. Although subjects were not CABG surgery patients, 72% approached surgery with optimism. Despite this, 71% acknowledged preoperative anxiety and 17% labelled it as extreme. Kornfeld et al. (1982) would substantiate this finding on the basis that for some of their CABG surgery subjects (n=100), the line between life and death tended to blur when they realized the heart would be manipulated during surgery.

Christopherson and Pfeiffer (1980) claim that waiting for CABG surgery gives the patient "more than enough time to minimize or exaggerate their fears about the impending operation" (p. 854).

The cardiac patient, whether facing surgery or an indeterminate waiting period may suffer from, what Janis (1982) calls, various losses regardless of available choices. This is exemplified by the fact that heart surgery is often viewed by the patient as being either life-saving or death-producing (Abram, 1965). During the waiting period the patient has time to face the stark reality of what the actual procedure entails and this maybe thought of as a danger.

Some patients, however, may think of the indeterminate waiting period in this manner as they fear an MI and/or death to be the consequence of not having imminent surgery. This sets the patient up for an internal tug-of-war or an approach/avoidance conflict. Lewin (1935) described this type of conflict as having to make a choice that may have a positive as well as a negative outcome. The available choices have approximately equal strength in pulling the individual to opposite poles. In the context of waiting an indeterminate period of time for CABG surgery, the goals of this surgery, the positive pole, can not be approached without considering the operative risks, the negative pole. If the patient is able to avoid surgery by waiting, the risks of disease progression and possible MI and/or death, must be approached.

This proposition helps explain the following finding. Cozac (1988) interviewed spouses (n=7) who had mates in ICU and found that waiting for CABG surgery was perceived as a time of conflict, especially if surgery had been delayed for any length of time. Subjects viewed their mates in constant danger of having a massive MI and dying before the operation prompting them to look forward to the surgery. The fear surrounding the actual surgical procedure, however, was still present during the wait prompting the spouse to wish surgery could be postponed as long as possible. Waiting was described as "both a blessing and a curse" (p. 67).

Breznitz and Goldberger (1982) state it is important for the researcher to examine the duration of exposure an individual has had to a stimulus-stressor in an attempt to understand adaptational outcome. Stress, according to Haan (1982) is commonly understood to occur when an individual perceives a situation to be "bad" and gives as an example, the cancellation of an eagerly

anticipated "good" event. Clarke (1984 b) suggests that an operation that a patient has had to wait a long time for will be perceived as being of great benefit, even though the wait may have produced demands of its own.

Several investigators have found that waiting for cardiac surgery impacted the patient in a manner such that surgery was approached with eager anticipation. In Morgan's (1971) study of patients awaiting either congenital or valve corrective surgery "the approach to the operation became a blend of anxiety about the surgery itself, but pleasure that something could be offered to them with definite prospects of improved health afterwards" (p. 42). Reimer-Kent (1990) also found evidence that as time passed most subjects saw the indeterminate wait as stressful and eagerly anticipated surgery, expressing few concerns about the procedure they felt would allow them to return to a normal life. These findings are similar to those in a comparative analysis by Gilliss (1984) of family stress during and after CABG surgery. The subjects consisted of patients (n=71) and their spouses (n=71). Some of these patients were initially considered too ill to benefit from CABG surgery, and had been forced to wait until they had a chance to find a surgeon who would perform the operation. From retrospective data, gathered through semi-structured interviews, three to eight days postoperatively, waiting was the most frequently identified stressor. Unfortunately, this finding was not supplemented with information about the time involved in the wait, or about the parameters utilized to assess the severity of the subject's illness. In spite of the limited generalizability of this study, it is still important to note that the impact of waiting was so profound, that subjects denied any stress associated with the actual surgical event.

These studies lend support to the proposition that the dimension of cognitive appraisal called primary appraisal or stress can be associated not just with the actual surgical event but also with the waiting period. According to Pearlin, Lieberman, Menaghan, and Mullan (1981), "stress can not be understood solely in terms of antecedent conditions, for people may differ considerably with regard to how they are affected by the same conditions" (p. 346). These differences presumably are the result of the ways people appraise and respond to life problems (Pearlin et al., 1981). Research is needed that specifically looks at antecedents, such as extraneous processes and uncertainty as well as any of the threats and/or challenges of an indeterminate waiting period. The behavioral and/or cognitive efforts utilized to manage this time frame also need to be documented. Therefore, an examination of cognitive appraisal must also include an analysis of secondary appraisal or coping.

Secondary Appraisal

After the individual assesses the significance of the stimulus-stressor to well-being, the cognitive appraisal process continues with an examination of coping resources that are available to mediate its impact (Folkman & Lazarus, 1980, 1985; Lazarus & Folkman, 1984). It is theorized that coping has as great an effect on outcome as the stressful experience itself (Lazarus & Folkman, 1984). The "process" component of coping is built on a foundation of meaning that the individual attaches to the stimulus-stressor (Lipowski, 1970). Coping is also a dynamic process and not a static feature such as a personality trait (Folkman & Lazarus, 1985; Folkman et al., 1986; Haan, 1982; Lazarus & Folkman, 1984).

What sets this definition apart from the animal model or ego-psychology conceptualization of stress and coping is that no a priori assumption is made about good or bad coping, instead the focus remains on whether coping is successful (Folkman et al., 1986). Pearlin and Schooler (1978) believe the individual receives more protection from coping efforts if their repertoire is extensive and varied. As discussed in the beginning of this chapter, coping serves two main functions, either: action-oriented behaviors called problem-focused coping, which are strategies directed at altering the source of the stress itself (Folkman & Lazarus, 1980; Lazarus, 1974); or cognitive defense mechanisms called emotion-focused coping, which are indirect methods such as avoidance, denial, or defensive distortion of threatening information, which assist the individual in dealing with the stressor (Folkman & Lazarus, 1980; Folkman et al., 1979; Lazarus, 1974). The palliation of emotion-focused coping does not master the environment but instead reduces the affective, visceral, or motor disturbances evoked by the stimulus-stressor (Folkman & Lazarus, 1980; Lazarus, 1974). This type of coping does not necessarily signal maladaptive coping and may in fact be advantageous during a period of threat or uncertainty, such as in situations over which individuals have little or no control (Folkman & Lazarus, 1980; Folkman et al., 1979; Lazarus & Folkman, 1984; Pearlin & Schooler, 1978).

Empirical data has been generated by Lazarus and colleagues that provides evidence of the duality and contextual nature of the coping process. In a sample of middle-aged members of a community (n=100) who responded to the Ways of Coping Checklist, during more than 1,300 stressful everyday encounters, Folkman and Lazarus (1980) found that in virtually every stressful

encounter both problem-focused and emotion-focused modes of coping were used. This finding was substantiated in another investigation by Folkman and Lazarus (1985), in which a natural experiment was conducted to elicit information about the process of stress and coping in a sample ($n=189$) of undergraduate psychology students facing a midterm exam. The investigators felt that this "stressful" encounter held three distinct stages: an anticipatory stage, or preparatory time for the examination; a waiting stage, or after the examination but before grades were announced; and an outcome stage, or having knowledge of the grade. It became apparent that subjects would use both problem-focused and emotion-focused coping strategies within the same situation. During the waiting period, however, problem-focused coping strategies significantly decreased ($t=11.36$, $p<.001$) and the use of an emotion-focused coping strategy, labelled distancing, increased. The investigators explained this finding on the basis that there was "nothing to do but wait" (p. 159).

Both Dubyts' (1988) and Reimer-Kent's (1990) qualitative studies of individuals awaiting CABG surgery found that various coping methods were utilized to ameliorate this indeterminate situation. Strategies such as positive thinking, hoping, and trusting were used during the wait. These methods fall within the mode of emotion-focused coping, as outlined earlier in the theoretical framework. These findings bear further investigation, as the waiting CABG surgery patient may very well use both modes of coping although the predominant strategies may be emotion-focused.

King (1985) conducted a longitudinal, correlational study of concerns and emotional responses associated with CABG surgery. Three interviews

were held with first-time, elective CABG surgery patients, the day before surgery (n=50), the day before discharge (n=50), and 3 weeks post discharge (n=47). During the interviews the Coping Strategy Questionnaire and Current Concerns Questionnaire were administered. Both these tools were developed from the literature, by the researcher. Interrater reliabilities were 84% for the quantitative component and 92% for the qualitative component. The Profile of Moods State (POMS), the third instrument, utilized to measure subject's perceived amount of emotional distress was administered at three additional time intervals: the day of admission; and postoperative day numbers three and five. In relation to the phenomenon of waiting, the investigator found that when comparing coping strategies utilized before and after surgery, direct action, or problem-focused coping scored lower in the preoperative period. "In fact, there is not much to be done but wait" (p. 584). Passiveness was associated with this time frame and cited as a possible explanation for this finding.

In an attempt to elicit the patient's perception of the effect of waiting on life and relationship with spouse/partner, Pieper et al. (1985) developed and administered the Perception of the Waiting Period questionnaire to subjects awaiting CABG surgery. Using a non-random sample of 28 males, between the ages of 40 to 64 years, who waited an average of two to four weeks, they discovered the longer subjects waited for surgery the less was the perceived effect of waiting (1) on life in general and (2) on relationships with spouse/partner. The authors suggest that time promoted problem-focused coping, by allowing the subjects an opportunity to seek information to help them adapt. This may have been the case, but there may also have been other possible explanations for this finding. For example, the subjects waited within a

known time frame and were included in the decision-making process of when surgery would be slated, thus the uncertainty associated with an indeterminate waiting period was eliminated.

Gurklis and Menke (1988) correlated identified stressors with the use of coping methods in chronic hemodialysis patients ($n=68$). Thirty percent of the sample had been on dialysis for longer than eight years. The instruments that were used to collect the data included: the Hemodialysis Stressor Scale, to rate incidence and severity of stressors; and the Jalowiec Coping Scale, to rate coping. Patients in this study used a combination of problem-focused and emotion-focused coping strategies. Length of time on dialysis was significantly correlated ($r=.261$, $p<.05$) with problem-focused coping. It was suggested that time, in this instance, gave patients a chance to evaluate coping methods and thus develop a repertoire of effective strategies.

The effect of problem-focused coping, specifically preoperative information, has been examined for its effect on surgical outcome (Cohen & Lazarus, 1973; Healy, 1968; Felton, Huss, Payne, & Srsic, 1976; Miller & Shada, 1978; Ray & Fitzgibbon, 1981; Schmitt & Wooldridge, 1973; Sime, 1976; Wolfer & Davis, 1970; Ziemer, 1983). Christopherson and Pfeiffer (1980) assumed that information seeking, while waiting, would be an important coping strategy for Caucasian men facing first time, elective CABG surgery. Their experiment consisted of three groups: an experimental group who read an educational booklet called "Learning Opportunities for the Heart Patient," during a mean waiting period of 14 days ($n=18$); a second experimental group who read the same booklet during a mean in-hospital waiting period of 1.2 days ($n=11$); and a control group consisting of patients who for various reasons had

refused to read the booklet. All subjects received routine preoperative teaching by the nursing staff on admission to hospital. The data collection instruments included: the State Trait Anxiety Inventory, that rated subject's anxiety; and a 20 item multiple-choice Knowledge Questionnaire, that assessed knowledge retention. At the study's conclusion the findings were inconclusive as to when to disseminate information to the waiting CABG surgery patient. Although no results reached a level of significance there was a tendency for patients to recover faster if they read the booklet only during the in-hospital waiting period. On closer examination of the results two variables: younger age and shorter cardiopulmonary bypass times may have accounted for this observation.

Another related finding, although not expounded upon, was the fact that all waiting patients admitted to reading the booklet several times. That this finding did not result in knowledge retention, as measured by these investigators, deserves further analysis. Several possible explanations may apply. Perhaps knowledge retention was not the correct measurement for coping with this stimulus-stressor. The findings also bring into question whether the information contained within the booklet was appropriate for the waiting period as clinical observations and limited investigations have revealed that this phenomenon is a unique experience (Dubys, 1988; Reimer-Kent, 1990).

That the waiting CABG surgery patient wishes information, however, is not disputed. Coombs (1987) looked at the educational needs of CABG surgery patients. With exploratory methods and cross-sectional design, three groups of ten pairs, patients and their significant other, were examined at three different times. Subjects were all out of hospital and either waiting for surgery, at least four days presurgery, or recuperating from surgery, either one week or four

weeks postdischarge. Although the description of the data analysis is scant, subjects did infer that the wait was stressful by expressing their desire for more information to help counter the mental reactions that occurred during this time frame.

From clinical experience, it is evident that CABG surgery patients often endure the wait with little or no information. Telephone calls to the surgeon's office are received from patients as they attempt to extrapolate information about their status on the waiting list. Some patients take what they feel is their only recourse and present to the emergency department with an episode of angina, hoping that this will result in hospital admission and immediate surgery. It has also been reported that neurology patients in Ireland try to circumvent the system by going to the Casualty Department when they are told that they must wait between three to five months for an appointment with a specialist (1991). Waiting CABG surgery patients become frustrated as they soon realize these strategies are fruitless and that this situation has few elements over which they have direct power and control. If information is unavailable during a period of anticipation, the individual, according to Lazarus and Launier (1978) will suffer chronic, perhaps mounting anxiety and be forced to use coping strategies such as denial, avoidance and/or intellectualization.

The literature indicates that waiting is associated with frustration, anger, powerlessness, and fear of losses, and that it is primarily managed with emotion-focused modes of coping. Coping strategies utilized by patients within an indeterminate waiting period for CABG surgery needs further exploration. If coping methods were examined in this "temporary" state of stress, the results

may further extend the knowledge base of the waiting CABG surgery patient, in regard to this dimension of cognitive appraisal.

Coping, as presented throughout this paper, mediates the stressful person-situation encounter. Nyamathi and van Servellen (1989) warn maladaptive coping can prolong the duration of the stimulus-stressor and negatively impact patient recovery and adaptation. If nurses are to evaluate a patient's ability to cope with a stimulus-stressor, they must understand the coping process as well as the strategies that ameliorate its impact (Keckeisen & Nyamathi, 1990). Such knowledge would assist nurses in helping patients prepare for and adapt to the experience of waiting an indeterminate period of time for CABG surgery.

Adaptation

According to Cronin (1990) adaptation or important recovery outcomes may depend on cognitive appraisal of the illness event as well as the success or failure of selected coping efforts. The ultimate goal of both primary and secondary appraisal is adaptational outcome. Lazarus and Folkman (1984) delineate the complex relationships that exist between three major adaptational outcomes they call morale, social functioning, and somatic health. Mechanic (1977) defines social adaptation as a continuing willingness to remain engaged in everyday activities and concerns, and maladaptive behavior as a withdrawal in order to reduce a sense of threat, resulting in eroding social contacts and skills and feeding a sense of hopelessness. More specifically, the dimensions of physical symptoms; emotional adjustment; and social roles in the family, the workplace, and recreational activities have also been cited as important adaptational variables to examine in the cardiac patient population (Flynn &

Frantz, 1987; Lough, 1988). All these concepts are referents to a multifaceted and complex construct called quality of life that is impacted by the stimulus-stressor and dealt with through a continuous process of appraisal and reappraisal (Craig & Edwards, 1983; Lazarus & Folkman, 1984; Packa, 1989).

No investigations were found that directly examined the adaptation of waiting CABG surgery patients. Several studies, however, have looked at quality of life for the cardiac patient. Keckeisen and Nyamathi (1990) conducted an ex post facto correlational study of coping and adjustment after an acute MI (n=30). The findings suggest that better psychological adjustment one month after hospital discharge was due to the use of predominantly problem-focused coping strategies, such as seeking information and social support from other patients with the same condition.

Wallwork and Caine's (1985) prospective study measured patient's subjective perceptions of their health. This comparison study examined differences between and within groups of cardiac transplantation patients (n=61) and CABG surgery patients (n=84). Data was collected with the use of the Nottingham Health Profile. This two part instrument assesses quality of life by questioning six dimensions of social functioning and seven areas of daily life affected by health. There was a significant increase overall, in the quality of life when comparing scores before (n=84, mean=4.5), at three months (n=64; mean=1.3), and at one year (n=32; mean=0.9) after CABG surgery.

Functional benefits following CABG surgery were examined by Stanton, Jenkins, Savageau, and Thurer (1984). When comparing their sample (n=340) one month preoperatively, versus six months postoperatively, the following frequencies of attendance at social activities were found: 40% remained at a

constant level of activity; 41% increased their activity; and 19% decreased their activity. Other social functional benefits examined included number of hobbies and activities regularly performed. For 22% of the sample these did not change after surgery, 43% were involved in fewer hobbies, and 35% did more hobbies and activities. None of the social activities were associated with age, gender, or preoperative duration of illness.

Ross et al. (1978) longitudinally, studied the quality of life both pre and post open heart surgery for patients and families (n=200). Preoperatively 58% of the subjects felt they had become physically dependent on other members of the family. As a result of increasing disability as well as a lack of interest, leisure and/or hobby activities were also effected during the preoperative period. Sixty-three percent of the subjects had been forced to reduce the time they spent on leisure activities, yet, by eight months after surgery, 55% of the patients had increased the amount of time they spent on hobbies. Role changes within family, work, and social life have also been documented to occur during the waiting period for heart transplantation, due to the physical limitations imposed on the individual by the disease process (Allender et al., 1983; Buse & Pieper, 1990; Lough, 1988).

During the preoperative period, subjects in Penckofer and Holm's (1984) study were generally discouraged about life and so concerned about themselves that they were unable to participate in family, household, social, and recreational activities. This situation dramatically improved postoperatively when the subjects no longer suffered from angina. Flynn and Frantz (1987) also found symptom relief to be an expected benefit that was realized after CABG surgery by their subjects (n=29). This physiological variable contributed

to an enhanced quality of life as it was one of the factors that was most likely to affect overall life satisfaction. The other factors of importance to quality of life were mood or morale and material wealth or possessions.

Pieper et al. (1985) examined the perceptions of male CABG surgery patients to (1) the effect of waiting on their life and relationship with spouse/partner and (2) the rating of how waiting effected their life and relationships with spouse/partner. The responses were quantified on a scale of 1 (minimal effect) to 7 (a great effect). Qualification of the scores were provided by a rating scale from 1 (negative) to 7 (positive). A significant inverse relationship was found between total life-effect scores ($r=-.37$, $p<.05$) and length of waiting time as well as between relationship-effect scores ($r=.35$, $p<.05$) and length of waiting time. The life-rating scores correlated positively ($r=.31$, $p<.05$) with length of waiting time. These findings suggest that the waiting period for CABG surgery was quantified and qualified as having little effect on life and on relationship with spouse/partner.

O'Connor (1983) found that with 30 male subjects postoperative psychosocial functioning positively correlated with preoperative psychosocial functioning ($F=5.02$; $p<.05$), the absence of depression ($F=13.93$; $p<.05$), and postoperative perception of health ($F=4.46$; $p<.05$). There also was a relationship between number of CABG's performed and the patient's postoperative perception of their health ($F=6.49$; $p<.05$). Although there is no physiological basis to this assumption, the patient may, nevertheless, believe that the two are related and this may have an impact on cognitive appraisal.

These studies have looked at the patient's quality of life. Although the definition for this concept differed between investigations their results have

shed light on this very important aspect of adaptation. Mumford, Schlesinger, and Glass (1982) conducted a meta-analysis of research (n=34) that examined the effects of psychological intervention on recovery from either cardiac surgery and/or an MI. Based on their work, they warn the medical community not to ignore the patient's preoperative emotional status because it will not dissipate on its own and may needlessly impede eventual surgical outcome.

If, as the literature suggests, the preoperative phase is one of emotional upheaval, contingent on an individual's ability to cope, and directly related to eventual surgical outcome, it becomes imperative to advance our understanding beyond the preoperative period and focus on a phenomenon called the indeterminate waiting period. Many assumptions and questions remain unanswered about this time frame and its effect on the patient. This research study is intended as an initial investigation that will describe this phenomenon within the theoretical constructs or the antecedents to and the dimensions of the process of cognitive appraisal, in order to better understand its effects on the individual.

Summary

This chapter has presented an overview of the Lazarus Stress, Appraisal, and Coping Paradigm. As a theoretical framework it provides structure to an investigation of the experience of waiting an indeterminate period of time for CABG surgery. Through a critique and analysis of the literature, rationale for the importance of each selected construct has been provided within the phenomenon of interest. The few studies that directly examined the indeterminate waiting period for CABG surgery have added to the knowledge base regarding the importance of the variable "waiting" on the patient and

spouse/family. Attention has also been drawn to the numerous personal and situational factors that may influence the process of cognitive appraisal as it pertains to this phenomenon. More research is required as waiting for CABG surgery, or health care in general, is not going to dissipate in the near future. Scientific data needs to be generated, by nurse researchers who are concerned about the quality of a patient's life, not just pre and/or post CABG surgery but also during the indeterminate waiting period for this procedure. The importance of such an undertaking has its roots in the words of nursing's pioneer, Florence Nightingale (1859) who stated that a patient may experience more harm from the mental anguish associated with apprehension, uncertainty, waiting, expectation, and fear of surprise, than from the physical problems associated with the illness.

CHAPTER THREE

Methodology

The survey research method was utilized to generate a profile of the characteristics of patients who waited an indeterminate period of time for elective CABG surgery. The research design, sample, procedure, data collection instrument, and ethical considerations of this descriptive/exploratory study are presented in this chapter.

Research Design

A retrospective, descriptive research design was used for this telephone and medical record survey. There were several reasons for selecting this design. First, retrospective data allowed the investigator to state the exact length of the indeterminate waiting period for each subject. Second, research about this experience and a profile of this population was found to be lacking. Third, it is hoped that the generated data will provide a descriptive data base and uncover areas where further investigation is required.

The subjects in this study were surveyed by telephone to obtain self-report data about personal factors, situational factors, and the process of cognitive appraisal pertaining to their waiting experience. The investigator also surveyed the subject's medical record to ascertain the length of the indeterminate waiting period as well as to collect selected demographic and biophysical data.

Population, Sample, and Sample Selection

The population of interest were all patients in Manitoba, who waited an indeterminate period of time for elective, first-time, nonconcomitant CABG surgery, in 1990. This finite population consisted of approximately 190 individuals from two tertiary care facilities where cardiac surgery is performed. The sample for this investigation represented approximately 20% of this target population and consisted of an accessible population (n=39) of postoperative patients from one cardiac surgeon, at one of these hospitals.

All patients admitted from this surgeon's waiting list, for first-time, elective CABG surgery in 1990, were eligible for inclusion in the study sample. This sample was convenient as well as homogeneous with respect to cognitive appraisal, because information given to the patient concerning the waiting period would have been the same across subjects. Retrospective information in this population of individuals was also judged to be reasonably reliable. This assumption is based on anecdotal evidence that patients have lasting memories of their waiting experience. The timing of the study in relation to the recovery process was also considered. Clinical experience, together with reports of several investigations suggest that by three (Lovvorn, 1982; Nicklin, 1986; Wilson-Barnett, 1981) to six months (Stanton et al., 1984; Zyzanski et al., 1981) most patients are able to resume activities of normal daily living and as such the subjects should be able to actively participate in a short telephone interview. Also, by obtaining retrospective data the subjects could be completely assured that their responses would not effect their surgical care in anyway, and this may have increased the response rate and added candidness

to the self-report data. The sample consisted of 30 subjects who met the following study criteria:

1. Postoperative, first-time, elective, nonconcomitant CABG surgery.
2. Ability to understand and speak English.
3. Capable of responding in an interview situation.
4. Access to a telephone in the home.

Procedure

The Acting Section Head of Cardiovascular Thoracic (CVT) Surgery sent potential subjects a letter (Appendix A) explaining the purpose of the study as well as the voluntary and confidential nature of the investigation (Appendix B). This allowed all eligible subjects an opportunity to consider whether they wished to be contacted for possible research purposes. Two weeks after mailing the letters the Acting Section Head of CVT Surgery released to the researcher, the names, addresses, and telephone numbers of potential subjects who had not voiced an objection.

Calls were placed to the potential subject's home telephone between the hours of 10 AM and 9 PM, over a two week period in the middle of May, 1991. This initial call followed the protocol outlined in Appendix C and served the following purposes: introducing the investigator; clarifying the survey; and obtaining formal verbal consent to a) participate in the semi-structured interview and b) access the subject's medical record. If initial contact was made at an inconvenient time, alternative, mutual agreeable arrangements were made to conduct the interview. Once consent was obtained the subjects were asked to respond to a guided semi-structured interview. Interviews ranged from 15 to 50 minutes with a mean time of 23 minutes. When the interview was completed the

researcher thanked participants for their time and attention, and determined the participants who wished a copy of the findings. Following the telephone interview and after securing the participant's verbal consent, the medical record was reviewed for information concerning selected waiting period events as well as demographic and biophysical characteristics.

Data Collection Instrument

Self-report as well as medical record data were collected using the Indeterminate Waiting Period Survey (IWPS). Since no suitable, existing tool or questionnaire was found, a two-part data collection instrument was developed by the researcher to answer the research questions (Appendix D). The IWPS was structured to produce a description of the study population within the selected theoretical constructs and concepts. These constructs are conceptually and operationally defined as follows and appear in Table 1:

Extraneous Processes was selected as an antecedent to cognitive appraisal and conceptually defined as personal factors or demographic and biophysical characteristics that potentially influence the impact of an indeterminate waiting period for CABG surgery. This concept was operationally defined by the demographic variables age, gender, occupation, employment status, and marital status. The following six biophysical variables were also measured and are defined as follows: (1) angina severity, graded according to the New York Heart Association (NYHA) functional classification criteria where I = physical activity not limited; II = slight limitation of physical activity; III = marked limitation of physical activity; IV = inability to carry on any physical activity without discomfort and/or angina may be present at rest (Campeau, 1976); (2) number of significantly diseased vessels, both in their major segments and

Table 1.
Variables Measured by the IWPS

Construct	Concept	Variables	Measurement
Extraneous Processes	Personal Factors:	<u>Demographic Characteristics:</u>	
		Age	Part 2/Question 1
		Gender	Part 2/Question 2
		Occupation	Part 1/Question 8
		Waiting period employment status	Part 1/Question 9
		Unemployment benefits	Part 1/Question 10
		Current employment status	Part 1/Question 11
	Marital status	Part 1/Question 12	
	Personal Factors:	<u>Biophysical Characteristics:</u>	
		Angina severity	Part 2/Question 3
		Number diseased vessels	Part 2/Question 4
		Left main stem disease	Part 2/Question 5
		Previous MI	Part 2/Question 6
LVEF		Part 2/Question 7	
Symptom duration	Part 1/Question 7		
Uncertainty	Situational Factors:	<u>Event Characteristics:</u>	
		Actual waiting time	Part 2/Question 8

Table 1.
Variables Measured by the IWPS (continued)

Construct	Concept	Variables	Measurement
		Perceived waiting time	Part 1/Question 1
		Expected waiting time	Part 1/Question 2
		Number cardiac catheterization(s)	Part 2/Question 9
		Hospital admission(s)	Part 1/Question 3
		Admission cancellation(s)	Part 1/Question 4
		Surgical postponement(s)/ cancellation(s)	Part 1 Question 5 & 6
Cognitive Appraisal			
a) Primary Appraisal	Stress	Waiting period difficulties/ benefits	Part 1/Question 13
b) Secondary Appraisal	Coping	Waiting period thoughts/actions	Part 1/Question 14
c) Reappraisal	Modifications	Suggestions/ advice	Part 1/Question 15
d) Adaptation	Outcome/ Quality of Life	Impact on a) Health b) Family life c) Home life d) Social life e) Leisure/hobby/ recreation	Part 1/Question 16,

branches, defined as a stenosis quantified as 70% or greater or qualified as significant and/or severe (Alderman et al., 1982; Kennedy et al., 1982; Lawrie et al., 1982; Naunheim et al., 1988); (3) presence of significant left main stem disease defined as a 50% or greater stenosis or a stenosis described as significant or severe (Alderman et al., 1982; Califf et al., 1988; Christakis et al., 1989; Naunheim et al., 1988); (4) a history of a previous MI; (5) LVEF, or an estimation of left ventricular function; and (6) duration of symptoms, or whether subjects had experienced symptoms associated with CAD for more or less than one year, prior to the waiting period.

Uncertainty is an antecedent to cognitive appraisal and was conceptually defined as situational factors within an indeterminate waiting period for CABG surgery. This concept was operationally defined as actual waiting time (i.e. the number of days between surgical consultation and CABG surgery); number of cardiac catheterizations; perceived waiting time; expected waiting time; number and reasons for hospital admission(s); number of cancelled hospital admission for CABG surgery; and number of CABG surgery postponements and/or cancellations.

Cognitive appraisal is an interdependent process, central to the theory of stress and coping, whereby an individual evaluates a specific stimulus-stressor with respect to well-being (i.e. primary appraisal), assesses available resources as mediating options (i.e. secondary appraisal), evaluates whether specific actions were effective (i.e. reappraisal), and adjusts accordingly (i.e. adaptation). The process of cognitive appraisal is conceptually defined as specific, descriptive factors that are the result or the consequence of an indeterminate waiting period for CABG surgery. The dimensions of this

construct are conceptually and operationally defined as follows: stress or the difficulties and/or benefits encountered during the waiting period; coping or the thoughts and/or actions used to manage the waiting period; reevaluation or the suggestion(s) and/or advice for other waiting patients; and outcome or the degree to which the waiting period impacted aspects of the individual's life.

The semi-structured interview guide of the IWPS (Appendix D) was intended to be unambiguous and the questions were broad and designed to avoid bias. A combined format of questioning was used to address the process of cognitive appraisal and the items were asked in a sequential manner so that the theoretical link between primary appraisal, secondary appraisal, reappraisal, and adaptation to this stimulus-stressor would be established. There were several open-ended questions addressing the concepts of stress, coping, and reevaluation. These questions sought to elicit the threats and/or challenges encountered during the waiting period, the coping strategies that had been used to deal with this time frame, and the coping strategies that were now being recommended for other waiting CABG surgery patients.

There was also a set of questions that addressed the concept of outcome. Subjects were asked to rate on a five-point Likert scale where 1=not at all, 2=very little, 3=somewhat, 4=a fair amount, and 5=a great deal, the perceived impact of the waiting period on their: health; family life; daily routines and/or home responsibilities; social life; and leisure, recreational and/or hobby life. The interview guide ended with an evaluative question of the tool itself. This item assured the researcher that all important aspects and issues about the waiting experience were adequately covered by the questionnaire.

Questions that addressed each of the theoretical constructs were based on: relevant literature, previous fieldwork findings, and personal experience as a cardiac surgery nurse clinician. Evidence of face and content validity were obtained prior to data collection by asking a panel of experts (two members of the nursing faculty and a cardiac surgeon), to judge the instrument. The semi-structured interview guide was then pilot tested with five cardiac patients who were similar to the population of interest. During these interviews subjects' responses to the questions were not as important as their assessment of the instructions and/or items in the questionnaire. Based on this preliminary data several minor revisions were made to the final instrument (Appendix D).

Data Analysis

During the interview process quantitative data was recorded directly from subjects' responses. Qualitative data was handled as follows: open-ended responses were recorded verbatim in key words and phrases, these were then expanded immediately after the interview, making the data as detailed and meaningful as possible for analysis. Content analysis was then used for the qualitative data and numerical categories were generated from the themes that emerged. The Jalowiec Coping Scale was used as a framework for analyzing the coping and reevaluation data in this study (Jalowiec, Murphy, & Powers, 1984). First, separate strategies were developed from the various responses. Second, each item was classified according its coping function. The problem-focused/emotion-focused dichotomy generated by Lazarus and colleagues (Folkman, 1984; Folkman & Lazarus, 1980, 1985; Folkman et al., 1986; Lazarus & Folkman, 1984; Lazarus & Launier, 1978) was used for this classification procedure. Jalowiec's definition and classification criteria for mode of coping

was extensively used in this study as was the forced classification criteria that called for categorizing any ambiguous strategy according to what the researcher felt was the predominant mode of coping (Jalowiec, Murphy, & Powers, 1984). All categorized data was then transferred to a coding sheet (Appendix E) and entered into the mainframe computer at the University of Manitoba. Descriptive statistical analysis using Statistical Analysis System (SAS) software included frequency distributions, measures of central tendency, and dispersion.

Ethical Considerations

A letter of invitation and explanation was sent out on behalf of the investigator to all potential participants by the office of CVT Surgery. This third party was used so that undue pressure on the subjects to participate in this study would be eliminated. Each subject was informed in writing as well as verbally that participation in the study was entirely voluntary and that they had the right to withdraw at any time. Verbal consent was obtained from subjects for participating in the interview as well as for accessing their medical record. All consenting subjects were assured of confidentiality. The subjects were given an identification number and their names did not appear on the data collection form. A master list, cross-tabulating the subject's name, address, and telephone number with their identification number, however, was kept separate from the raw data in a locked filing cabinet. All raw data was held until it was no longer required by the investigator or the thesis committee.

There was no experimental manipulation of the subjects and no harmful effects were felt to result from participating. There were also no immediate benefits to participating, however, subjects had an opportunity to tell the

researcher how the waiting period had effected them as well as to suggest how current and future patients might be helped in dealing with this stimulus-stressor. These were important aspects that warranted the study.

Summary

Letters of invitation were sent to 39 postoperative, first-time, elective, nonconcomitant CABG surgery patients from the practice of one cardiac surgeon in Manitoba, resulting in a self-selected sample of 30 individuals. Data were collected using the IWPS, an instrument developed by the researcher to describe the population within the constructs and concepts of the theoretical framework. All gathered data were numerically coded and analyzed using descriptive statistics. The protection of human subjects, as it applied to this investigation has also been presented. From the data a profile of the population emerged and these findings are presented and discussed in the following two chapters.

CHAPTER FOUR

Results

This chapter presents the research findings. These results will provide answers to each of the following questions:

1. What are the personal factors or demographic and biophysical characteristics of patients who waited an indeterminate period of time for CABG surgery?
2. What are the situational factors or events that characterize an indeterminate waiting period for CABG surgery?
3. How was the indeterminate waiting period for CABG surgery cognitively appraised?

Letters of invitation and explanation were sent to 39 postoperative, first-time, elective, nonconcomitant CABG surgery patients, from the practice of one cardiac surgeon. These potential subjects were instructed to call the office of CVT Surgery, within two weeks of receiving this information, if they objected to being contacted for research purposes. During this allocated time, four individuals declined the invitation; four letters were returned without a forwarding address; and one patient had died. It is interesting to note that during this time period, four individuals contacted the researcher directly to ensure their inclusion in the study. Individuals contacted by the researcher all consented to be study subjects, for a response rate of 88%. The subjects who were initially contacted at an inconvenient time all made suitable, alternative

arrangements that allowed them to participate. All subjects spoke openly and freely, and appeared enthusiastic and willing to share their waiting experiences.

Research Question One

What are the personal factors or demographic and biophysical characteristics of patients who waited an indeterminate period of time for CABG surgery?

Demographic Characteristics

Age.

The respondents ages are categorized in Table 2, and ranged from 50 to 81 years with a mean of 65 (SD=8) and a median of 64. Twelve (40%) subjects were between 61 and 70 years of age, and seven (23%) subjects were over the age of 70 years.

Table 2.

Distribution of Respondents According to Age

Age	Frequency	Percent
50 - 60	11	36.7
61 - 70	12	40.0
71 - 80	6	20.0
81 - 90	1	3.3
Total	30	100.0

Gender.

The distribution of respondents according to gender, revealed there were 26 (87%) males and four (13%) females in this sample.

Marital status.

Subjects were asked what their marital status had been during the waiting period. Twenty six (87%) subjects were with a partner (i.e. married or living common-in-law) and four (13%) subjects who were without a partner (i.e. single, widowed, divorced, or separated).

Employment status/occupation.

Occupation was coded for all subjects, even those who were retired during the waiting period. Seventeen (57%) respondents were categorized as skilled workers, farmers, or homemakers and 13 (43%) subjects were professionals or executives. None of the subjects were classified as unskilled.

Subjects were asked several questions concerning their employment status. Table 3, depicts both the waiting period and current employment status for the sample. During the waiting period 13 (43%) subjects were unemployed. Of these subjects eight (62%) were receiving unemployment benefits. Employment status changed after CABG surgery for five (38%) of the subjects who were unemployed during the waiting period: three (23%) resumed full-time work and two (15%) reached age 65 years and permanently retired. One subject who was working full-time during the waiting period was only offered part-time work after surgery. The subject who was working part-time before as well as after surgery stated this employment status was cardiac related. This subject was, therefore, included in Table 4, which outlines the multiple reasons subjects gave for being unemployed. The most frequently cited reason for waiting period unemployment was cardiac related (n=10, 77%). The other reasons included: chronic health conditions, such as back problems; physician

advice; and nonhealth-related situations, such as being laid-off. After surgery only two subjects cited their heart condition as a reason for unemployment.

Table 3.

Waiting Period and Current Employment Status

Employment Status	Waiting Period Frequency	Percent	Current Frequency	Percent
Full-time	6	20.0	8	26.7
Part-time	1	3.3	2	6.7
Unemployed	13	43.3	8	26.7
Retired	10	33.3	12	40.0
Total	30	100.0	30	100.0

Note. Test for equality of proportions was not statistically significant.

Table 4.

Reasons for Waiting Period and Current Unemployment

Unemployment Reasons	Waiting Period Frequency n=13	Current Frequency n=8
Cardiac	10	2
Chronic health problem	5	5
Physician advice	4	3
Nonhealth-related	2	1

Note. Some subjects reported more than one reason.

Biophysical Characteristics

Symptom duration/angina severity/LVEF.

Subjects were asked how long they had been aware of their heart condition, prior to the waiting period. The information was coded as either more than or less than one year. For the majority of subjects (n=24, 80%) symptom duration was more than one year.

A classification for angina severity was obtained from the medical record. At the time of admission to hospital all subjects' had their symptoms of angina graded according to the NYHA functional classification criteria. As all subjects were electively admitted and considered to be stable waiting patients, it was assumed that their grade of angina had remained relatively unchanged over the waiting period. Only one (3%) subject was NYHA Class I ; 13 (43%) were Class III; and 16 (53%) were Class IV.

The percent value for LVEF was available in the medical records of 19 subjects and ranged from 16 to 85% with a mean of 44% (SD=15) and a median of 43%.

Previous MI, number of diseased vessels, left main disease.

The medical record was also reviewed for documented evidence of a previous MI, number of diseased vessels, and the presence or absence of significant left main stem disease. Almost one half of the subjects (n=13, 43%) had sustained an MI at some point prior to the waiting period, 26 (86%) had disease in three or more arteries, and eight (26%) had stenosis of the left main stem.

A personal factor profile summarizing all the demographic and biophysical characteristics from this investigation appears in Table 5.

Table 5.
Summary of the Demographic and Biophysical Characteristics

Characteristic	Frequency	Percent
Age group (years)		
≤ 65	17	56.7
> 65	13	43.3
Gender		
Male	26	86.7
Female	4	13.3
Occupation		
Unskilled	----	----
Skilled/Homemaker	17	56.7
Executive/Professional	13	43.3
Waiting period unemployment	13	43.3
Current unemployment	8	26.7
Marital status		
With Partner	26	86.7
Without Partner	4	13.3
Angina severity		
NYHA Class I	1	3.3
NYHA Class II	----	----
NYHA Class III	13	43.3
NYHA Class IV	16	53.3
Number diseased vessels		
1	1	3.3
2	3	10.0
≥ 3	26	86.6
Left main disease	8	26.7
Previous MI	13	43.3
LVEF *		
≥ 50%	6	31.6
30 - 49%	11	57.9
< 30%	2	10.5
Symptom duration (weeks)		
≤ 52	6	20.0
> 52	24	80.0

* LVEF data were unavailable for 11 subjects.

Research Question Two

What are the situational factors or events that characterize an indeterminate waiting period for CABG surgery?

Waiting Period Characteristics

Actual waiting time.

The actual waiting time was calculated as the number of days between the initial consultation for CABG surgery and the day surgery was actually performed. This time frame ranged from 16 to 650 days with a median of 63 days and a mean of 110 (SD=131) days. Table 6, shows that 14 (47%) subjects waited between zero and 56 days (≤ 8 weeks) and most subjects (n=24, 80%) had surgery between zero and 168 days (≤ 24 weeks).

Table 6.

Distribution of Respondents According to Actual Waiting Time

Actual Waiting Time (Days)	Frequency	Percent
0-56	14	46.7
57-168	10	33.3
169-365	5	16.7
>365	1	3.3
Total	30	100.0

Perceived waiting time.

Subjects were asked how long they recalled waiting for surgery. The intent of this question was to have subjects focus their thoughts on this past life

event as well as to validate the assumption that subjects did in fact have accurate lasting memories of this experience. All subjects recalled precisely the day and month of surgery and the month they had seen the cardiac surgeon.

Expected waiting time.

Subjects were asked how long they had expected to wait for surgery. Table 7, shows that expectations varied widely from less than eight weeks to greater than one year.

Table 7.

Distribution of Respondents According to Expected Waiting Time

Expected Waiting Time (days)	Frequency	Percent
0-56	20	69.0
57-168	5	17.3
169-365	3	10.3
>365	1	3.4
Total	29 *	100.0

* One subject was unable to speculate on expected waiting time.

Several subjects gave unsolicited reasons for their expectations. The subject who expected to wait more than a year felt his "condition was stable" and he would, therefore "have to wait forever". Five (17%) subjects had their expectations influenced by the media coverage of the long waiting lists and lengthy waiting period for CABG surgery. These subjects expected to wait from three weeks to as long as one year for their surgery.

Of the 20 subjects who expected to wait less than eight weeks for their surgery, eight (40%) had expected immediate surgery. The actual waiting time for these subjects ranged from 16 days (>2 weeks) to 237 days (>34 weeks). Table 8, shows that the majority of subjects (n=25, 86%) experienced unmet waiting time expectations.

Table 8.

Distribution of Respondents According to Whether Expected Waiting Time was Realized

Waiting Time	Frequency	Percent
Actually waited more time than expected	16	55.2
Actually waited less time than expected	9	31.0
Actually waited same amount of time as expected	4	13.8
Total	29 *	100.0

* One subject was unable to speculate on expected waiting time.

Hospital admissions.

During the waiting period four (13%) subjects were admitted to hospital for reasons other than CABG surgery. All four gave chest pain or angina as the cause for admission. One subject also recalled being admitted for the flu.

Admission/surgery postponement(s)/cancellation(s).

Subjects were asked how many times surgical admission plans were cancelled. This occurred to three (10%) patients: once to two subjects; and three times to the other subject. These subjects waited between 87 and 115 days for their surgery.

After being scheduled for surgery and admitted to hospital, six (20%) respondents recalled having their surgery postponed. This happened once for three subjects; twice for one subject; three times for one subject; and a total of four times for one subject. The individual who had surgery postponed three times was the same person who had three admission cancellations. The subjects whose surgeries were postponed waited from 45 to 650 days. One participant had surgery cancelled, resulting in hospital discharge and returning to the waiting period. This individual actually waited 29 days.

Table 9.

Distribution of Respondents According to Admission Cancellations, Surgical Postponements, and Surgical Cancellations

	Admission Cancelled n (%)	Surgery Postponed n (%)	Surgery Cancelled n (%)
None	27 (90.0)	24 (80.0)	29 (96.7)
One	2 (6.7)	3 (10.0)	1 (3.3)
Two	0 (0.0)	1 (3.3)	0 (0.0)
Three	1 (3.3)	1 (3.3)	0 (0.0)
Four	0 (0.0)	1 (3.3)	0 (0.0)
Total	30 (100.0)	30 (100.0)	30 (100.0)

Number of cardiac catheterizations.

During the waiting period, four (13%) subjects underwent cardiac catheterization. In all cases this repeat procedure was performed because six months had elapsed since the initial angiogram.

A situational factor profile of the indeterminate waiting period for CABG surgery, as measured by the variables in this investigation, are summarized and displayed in Table 10.

Table 10.
Summary of the Waiting Period Events

Characteristic	Frequency	Percent
Actual waiting time (days)		
0-56	14	46.7
57-168	10	33.3
169-365	5	16.7
>365	1	3.3
Expected waiting time (days) *		
0-56	20	69.0
57-168	5	17.3
169-365	3	10.3
>365	1	3.4
Hospital admissions		
None	26	86.7
One	1	3.3
≥ Two	3	10.0
Admission cancellation		
None	27	90.0
One	2	6.7
≥ Two	1	3.3
Surgery postponements		
None	24	80.0
One	3	10.0
≥ Two	3	10.0
Surgery cancellation		
None	29	96.7
One	1	3.3
Repeat cardiac catheterization	4	13.3

* One subject was unable to speculate on expected waiting time.

Research Question Three

How was the indeterminate waiting period for CABG surgery
cognitively appraised?

Primary AppraisalWaiting period difficulties.

Subjects were asked two questions concerning waiting period difficulties. The first asked for their greatest difficulty and the second for as many other difficulties as they could recall. The total number of difficulties cited per subject ranged from none to seven, as noted in Table 11. Three (10%) subjects cited only a greatest difficulty and one (3.3%) subject cited a total of seven. The majority of respondents (n=21, 70%) recalled that they had experienced between two and five difficulties each.

Table 11.

Distribution of Respondents According to Number of Identified Waiting Period Difficulties

Number of Difficulties	Frequency	Percent
None	3	10.0
One	3	10.0
Two	5	16.7
Three	6	20.0
Four	5	16.7
Five	5	16.7
Six	2	6.7
Seven	1	3.3
Total	30	100.0

In all, 27 (90%) of the 30 subjects recalled at least one difficulty associated with the waiting period. This was considered their greatest difficulty and after content analysis nine difficulty items were revealed. Twenty-four (80%) of the subjects cited more than one difficulty and this yielded another three items. From the data a total of 12 items were generated in response to the difficulty questions. Table 12, presents all the waiting period difficulties and specifies whether the item was cited as a greatest difficulty or one of the other difficulties. The most frequently cited greatest difficulties were: fear of having an MI and/or dying before receiving surgery (n=8, 27%); experiencing recurrent symptoms, such as dyspnea and/or angina (n=6, 20%); and fear of missing the telephone call that would notify them that surgery was scheduled (n=6, 20%). Analyzing the other difficulties revealed that: 12 (40%) subjects found it difficult to put life on hold as they waited for surgery; 11 (37%) subjects feared missing the call from the hospital; and ten (33%) subjects experienced recurrent symptoms that they found worrisome and/or bothersome. The data was also analyzed for the overall frequency with which each of the difficulties had been cited and appears in Table 13. This was done because of the exploratory nature of the question, and the fact that cited items had not been rated for degree of difficulty they had caused. Overall, the most frequently cited waiting period difficulties were; fear of missing the telephone call (n=17, 57%); fear of having an MI and/or dying during the waiting period (n=16, 53%); experiencing recurrent symptoms (n=16, 53%); and putting life on hold (n=14, 46%). It can be seen that the top four difficulties are the same between greatest and overall except that the order has changed. For example, fear of MI and/or death had

the highest frequency as a greatest difficulty and it tied for second place as being mentioned as an overall difficulty.

Table 12.

Distribution of Respondents According to Identified Waiting Period Difficulties

Difficulty	Greatest Frequency	Percent	Other Frequency	Percent
Fear of MI/death	8	26.7	8	26.7
Recurrent symptoms	6	20.0	10	33.3
Fear of missing call	6	20.0	11	36.7
Putting life on hold	2	6.7	12	40.0
Lack of information	1	3.3	5	16.7
Fear of being cancelled	1	3.3	1	3.3
Taking medications	1	3.3	---	---
Lack of personal control	1	3.3	3	10.0
Fear of actual surgery	1	3.3	4	13.3
Impact on spouse/family	---	---	8	26.7
Being in limbo/isolated	---	---	5	16.7
Financial difficulties	---	---	1	3.3

Note. Some subjects cited no difficulties, whereas, some subjects cited more than one other difficulty.

Table 13.

Distribution of Respondents According to Overall Waiting Period Difficulties

Difficulty	Frequency	Percent
Fear of missing call	17	56.7
Fear of MI/death	16	53.4
Recurrent symptoms	16	53.4
Putting life on hold	14	46.7
Impact on spouse/family	8	26.7
Lack of information	6	20.0
Fear of actual surgery	5	16.7
Being in limbo/isolated	5	16.7
Lack of personal control	4	13.3
Fear of being cancelled	2	6.6
Taking medications	1	3.3
Financial difficulties	1	3.3

Note. Some subjects cited no difficulties, whereas, some subjects cited more than one other difficulty.

Waiting period benefits.

Consistent with the theoretical framework, that stress can be generated from stimuli perceived as either good and/or bad, all subjects were asked to recount any waiting period benefits. The benefit questions followed the same format that had been used for the difficulty questions. The total number of benefits, either greatest and/or other are displayed in Table 14, and ranged from none to three. Most of the sample (n=15, 50%) recalled that the waiting period had no benefit(s).

Table 14.

Distribution of Respondents According to Number of Identified Waiting Period Benefits

Number of Benefits	Frequency	Percent
None	15	50.0
One	10	33.3
Two	4	13.3
Three	1	3.3
Total	30	100.0

Seven items were derived from content analysis of this question. Table 15, displays all these waiting period benefits and specifies whether it was cited as a greatest and/or an associated other benefit. Getting comfort and support from their spouses, families and/or other individuals was the most frequently cited greatest benefit to the waiting period (n=6, 20%), followed closely by having time to put life and personal affairs in order before surgery (n=5, 17%). This latter greatest benefit was also the most frequently voiced (n=2, 7%) other benefit associated with the waiting period. The frequency with which each item was cited as a benefit of the waiting period appears in Table 16. As with the responses to greatest and other waiting period benefit(s), getting comfort and support from their spouses, families and/or other individuals (n=7, 23%), and having time to put life and personal affairs in order before surgery (n=7, 23%) top this list as the most frequent overall benefits of the waiting period.

Table 15.

Distribution of Respondents According to Identified Waiting Period Benefits

Benefit	Best Frequency	Percent	Other Frequency	Percent
Getting comfort/ support from family/others	6	20.0	1	3.3
Putting life/affairs in order	5	16.7	2	6.7
Making lifestyle changes	2	6.7	---	---
Talking to CABG surgery patients	1	3.3	1	3.3
Not facing imminent surgery	1	3.3	---	---
Removing fear of actual surgery	---	---	1	3.3
Thinking things through	---	---	1	3.3

Note. Some subjects cited no benefit, whereas, some subjects cited more than one other benefit.

Table 16.

Distribution of Respondents According to Overall Waiting Period Benefits

Benefit	Frequency	Percent
Getting comfort/support from family/others	7	23.3
Putting life/affairs in order	7	23.3
Making lifestyle changes	2	6.7
Talking to CABG surgery patients	2	6.7
Not facing imminent surgery	1	3.3
Removing fear of actual surgery	1	3.3
Thinking things through	1	3.3

Note. Some subjects cited no benefit, whereas, some subjects cited more than one other benefit.

Secondary AppraisalWaiting period coping strategies.

To better understand how an indeterminate waiting period is managed, subjects were asked to disclose their coping strategies. This entailed eliciting any thoughts and/or actions used to modify the effects of this stimulus-stressor. All subjects were able to cite a best coping strategy and 28 (93%) subjects mentioned using other coping strategies as well. Best and other coping strategies were combined to give a total number of coping strategies cited, which is depicted in Table 17. Most subjects (n=10, 33%) had a repertoire of three coping strategies.

Table 17.

Distribution of Respondents According to Number of Identified Waiting Period Coping Strategies

Number of Coping Strategies	Frequency	Percent
One	2	6.7
Two	8	26.7
Three	10	33.3
Four	4	13.3
Five	3	10.0
Six	1	3.3
Seven	2	6.7
Total	30	100.0

Using content analysis for the coping questions, 25 separate strategies were identified. These items were coded into the predetermined coping mode categories. As seen in Table 18, 13 (52%) coping strategies such as keeping active, calling the surgeon's office to check their place on the waiting list, and staying by the telephone in case the hospital called were coded as serving a problem-focused function, whereas, 12 (48%) palliative coping strategies such as getting comfort and support from the family and/or other individuals, not thinking about the situation, and trying not to worry about the situation were coded as serving an emotion-focused function.

Table 18.
Coping Mode for 25 Separate Coping Strategies

Problem-Focused Coping Mode

1. Kept active
2. Called the surgeon's office regarding waiting list status
3. Stayed by the phone
4. Viewed the problem objectively
5. Talked to other CABG surgery patients
6. Watched myself for symptoms
7. Continued to live a normal life
8. Made lifestyle changes to combat my risk factors for heart disease
9. Accepted my situation and took things in stride
10. Controlled my symptoms and took my medications
11. Packed my suitcase so I would be ready for imminent surgery
12. Prepared my will
13. Inquired about the surgeon's reputation

Emotion-Focused Coping Mode

1. Tried not to worry
 2. Didn't think about it
 3. Got comfort and support from family and/or others
 4. Thought positively
 5. Had religious faith and prayed
 6. Had faith and trusted in the medical profession
 7. Hoped the wait would be over soon
 8. Meditated/searched for inner strength
 9. Hoped for the best
 10. Tried to relax
 11. Listened to music and/or watched TV
 12. Wished the hospital would call
-

All identified waiting period coping items are listed in Table 19, where they are also categorized according to the predetermined coping mode and specified as being cited as either a best or an associated other strategy. The five most frequently cited best coping strategies served both an emotion-focused as well as a problem-focused function. They included: keeping active (n=4, 13%); calling the surgeon's office regarding the waiting list (n=3, 10%);

staying by the phone in case the hospital called (n=3, 10%); trying not to worry (n=3, 10%); and not thinking about the situation (n=3, 10%). The most frequently cited other coping strategies associated with the waiting period were also items from both modes of coping and included: staying by the phone (n=7, 23%); thinking positively (n=7, 23%); continuing to live a normal life (n=6, 20%); talking to other CABG surgery patients (n=5, 17%); and getting comfort and support from family and/or others (n=5, 17%). There were a total of 15 best coping strategies and seven additional coping strategies associated with the waiting period. Table 20, indicates that overall the most frequently cited coping items served both a problem-focused as well as an emotion-focused function and included the strategies: didn't think about it (n=11, 37%); stayed by the phone (n=10, 33%); thought positively (n=9, 30%); and kept active (n=8, 27%).

Coping function was specifically analyzed for best mode, other mode, and overall mode. Table 21, shows that subjects used strategies with a problem-focused function (n=13, 57%) almost as frequently as they used those with an emotion-focused function (n=12, 43%) as their best mode for coping with the waiting period. Table 22, depicts the finding that the majority (n=15, 50%) of subjects used a variety of strategies from both modes of coping. To ascertain how many subjects used exclusively problem-focused strategies, exclusively emotion-focused strategies, or a combination of both, the other mentioned modes of coping were cross-tabulated with the best mode of coping. This analysis is displayed in Table 23, which reveals that overall the majority of respondents (n=23, 77%) used a combination of strategies from both modes of coping.

Table 19.

Distribution of Respondents According to Identified Waiting Period Coping Strategies

Coping Strategy	Best	Percent	Other	Percent
Kept active (P)	4	13.3	4	13.3
Called regarding waiting list (P)	3	10.0	1	3.3
Stayed by the phone (P)	3	10.0	7	23.3
Tried not to worry (E)	3	10.0	2	6.7
Didn't think about it (E)	3	10.0	8	26.7
Viewed problem objectively (P)	2	6.7	1	3.3
Talked to CABG surgery patients (P)	2	6.7	5	16.7
Got comfort/support from family/others (E)	2	6.7	5	16.7
Thought positively (E)	2	6.7	7	23.3
Had religious faith/pray (E)	1	3.3	---	---
Trusted medical profession (E)	1	3.3	3	10.0
Hoped surgery would happen soon (E)	1	3.3	---	---
Watched self for symptoms (P)	1	3.3	---	---
Continued to live a normal life (P)	1	3.3	6	20.0
Made lifestyle changes (P)	1	3.3	5	16.7
Meditated (E)	---	---	2	6.7
Hoped for the best (E)	---	---	2	6.7
Tried to relax (E)	---	---	2	6.7
Accepted situation/took things in stride (P)	---	---	2	6.7
Controlled symptoms/took medication (P)	---	---	2	6.7
Packed suitcase to be ready for admission (P)	---	---	1	3.3
Prepared a will (P)	---	---	1	3.3
Inquired about surgeon's reputation (P)	---	---	1	3.3
Listened to music/watched TV (E)	---	---	1	3.3
Wished for the call (E)	---	---	1	3.3

Note. Some subjects cited only a best coping strategy, whereas, some subjects cited more than one other coping strategy

P = Problem-focused coping; E = Emotion-focused coping.

Table 20.
Distribution of Respondents According to Overall Waiting Period Coping Strategies

Coping Strategy	Frequency	Percent
Didn't think about it (E)	11	36.7
Stayed by the phone (P)	10	33.3
Thought positively (E)	9	30.0
Kept active (P)	8	26.6
Talked to other CABG surgery patients (P)	7	23.4
Got comfort/support from family/others (E)	7	23.4
Continued to live a normal life (P)	7	23.4
Made healthy lifestyle changes (P)	6	20.0
Tried not to worry (E)	5	16.7
Called regarding the waiting list (P)	4	13.3
Had religious faith/prayed (E)	4	13.3
Had faith/trust in medical profession (E)	4	13.3
Viewed problem objectively (P)	3	10.0
Meditated (E)	2	6.7
Hoped for the best (E)	2	6.7
Tried to relax (E)	2	6.7
Accepted situation/took things in stride (P)	2	6.7
Controlled symptoms/took medication (P)	2	6.7
Hoped wait would be over soon (E)	1	3.3
Watched self for symptoms (P)	1	3.3
Packed a suitcase/ready for admission (P)	1	3.3
Prepared a will (P)	1	3.3
Inquired about surgeon's reputation (P)	1	3.3
Listened to music/watched TV (E)	1	3.3
Wished for the call (E)	1	3.3

Note. Some subjects cited only a best coping strategy, whereas, some subjects cited more than one other coping strategy.

P = Problem-focused; E = Emotion-focused.

Table 21.

Distribution of Respondents According to Best Mode of Coping Used During the Waiting Period

Coping Mode	Frequency	Percent
Problem-focused	17	56.7
Emotion-focused	13	43.3
Total	30	100.0

Table 22.

Distribution of Respondents According to Other Mode of Coping Used During the Waiting Period

Coping Mode	Frequency	Percent
Problem-focused	6	20.0
Emotion-focused	7	23.3
Both	15	50.0

Note. Some subjects cited only a best coping strategy.

Table 23.

Distribution of Respondents According to Overall Mode of Coping Used During the Waiting Period

Coping Mode	Frequency	Percent
Exclusively Problem-focused	4	13.3
Exclusively Emotion-focused	3	10.0
Both	23	77.0
Total	30	100.0

ReappraisalSuggestions/advice for other waiting patients.

During the interview subjects were asked for a best as well as any other helpful suggestions or advice they would give to current or future waiting CABG surgery patients. All subjects responded with a best suggestion and twenty-three (77%) subjects supplemented this with other suggestions. As displayed in Table 24, the total number of suggestions ranged from one (n=7, 23%) to six (n=1, 3%). Most subjects gave a best and one other suggestion (n=16, 53%).

All responses were analyzed for content and 18 separate suggestions emerged from this data. As with the preceding question on coping, all suggestions were classified according to the predetermined coping function classification and coded as either a problem-focused coping suggestion or a emotion-focused coping suggestion. Table 25, depicts the separate suggestions according to coping mode. Of the 18 (44%) suggestions, eight were categorized as problem-focused and ten (56%) as emotion-focused.

Table 24.
Distribution of Respondents According to Number of Waiting Period Suggestions/Advice

Number of Suggestions/Advice	Frequency	Percent
One	7	23.3
Two	16	53.3
Three	3	10.0
Four	2	6.7
Five	1	3.3
Six	1	3.3
Total	30	100.0

Table 25.
Coping Mode for 18 Separate Waiting Period Suggestions

Problem-Focused Coping Mode

1. Accept your situation and take it in stride
2. Keep active
3. Continue to live a normal life
4. Make lifestyle changes to help combat your heart disease
5. Call surgeon's office to inquire about your waiting list status
6. Talk to other CABG surgery patients
7. View the problem objectively
8. Get information about the surgery

Emotion-Focused Coping Mode

1. Don't worry
2. Try to relax
3. Think positively
4. Trust the medical profession
5. Hope that the wait will soon be over
6. Get comfort and support from family and/or others
7. Just keep waiting its worth it
8. Don't think about it
9. Have religious faith, trust, and pray
10. Meditate/search for inner strength

Subjects gave a total of 13 suggestions in all, as the best advice they would give to current or further waiting CABG surgery patients. These included strategies from both modes coping with don't worry (n=7, 23%); try to relax (n=5, 17%); and accept your situation and/or take things in stride (n=4, 13%) at the top of the list. Fourteen items were suggested as additional strategies for managing the waiting period and included advice such as keep active (n=6, 20%); don't think about it (n=5, 17%); think positively (n=4, 13%); and make healthy lifestyle changes (n=4, 13%). Table 26, shows all of the suggestions/advice received for this question and depicts each strategy according to mode of coping, and the frequency with which it was suggested as a best or an additional recommendation. The total number of subjects who cited each item as a suggestion or piece of advice appears in Table 27. Overall, the three most frequent suggestions included: don't worry (n=9, 30%); try to relax (n=8, 27%); and keep active (n=8, 27%).

Table 28, shows the best suggested mode of coping was emotion-focused (n=21, 70%) as opposed to problem-focused (n=9, 30%). Twenty-three (77%) subjects gave multiple other suggestions. An analysis of the coping function for this advice revealed that nine (30%) subjects recommended problem-focused strategies; eight (27%) subjects emotion-focused strategies; and six (20%) subjects strategies from both modes of coping, as displayed in Table 29. Cross-tabulation of the best suggested coping mode by the other suggested coping mode was carried out to ascertain how many subjects exclusively suggested a particular mode of coping. Table 30, shows that overall subjects suggested a combination of strategies from both modes of coping

(n=19, 63%), eight (27%) subjects suggested only emotion-focused strategies and the remaining three (10%) subjects suggested problem-focused strategies.

Table 26.

Distribution of Respondents According to Identified Waiting Period Suggestions

Suggestion/Advice	Best	Percent	Other	Percent
Don't worry (E)	7	23.3	2	6.7
Try to relax (E)	5	16.7	3	10.0
Accept your situation/ take things in stride (P)	4	13.3	---	---
Keep active (P)	2	6.7	6	20.0
Think positively (E)	2	6.7	4	13.3
Trust medical profession (E)	2	6.7	---	---
Hope wait will be over soon (E)	2	6.7	---	---
Continue to live a normal life (P)	1	3.3	2	6.7
Make lifestyle changes (P)	1	3.3	4	13.3
Call regarding waiting list (P)	1	3.3	---	---
Get comfort/support from family/others (E)	1	3.3	1	3.3
Just keep waiting (E)	1	3.3	---	---
Don't think about it (E)	1	3.3	5	16.7
Talk to CABG surgery patients (P)	---	---	3	10.0
View problem objectively (P)	---	---	3	10.0
Have faith/pray/trust (E)	---	---	2	6.7
Get information about surgery (P)	---	---	1	3.3
Search for inner strength (E)	---	---	1	3.3
Total	30	100.0		

Note. Some subjects cited only a best suggestion, whereas, some subjects cited more than one other suggestions/advice.

P = Problem-focused coping; E = Emotion-focused coping

Table 27.

Distribution of Respondents According to Overall Waiting Period Suggestions

Suggestions/Advice	Frequency	Percent
Don't worry (E)	9	30.0
Try to relax (E)	8	26.6
Keep active (P)	8	26.6
Think positively (E)	6	20.0
Don't think about it (E)	6	20.0
Make lifestyle changes (P)	5	16.7
Accept/take things in stride (P)	4	13.3
Continue to live a normal life (P)	3	10.0
Talk to other CABG surgery patients (P)	3	10.0
View the problem objectively (P)	3	10.0
Trust in the medical profession (E)	2	6.7
Hope the wait will be over soon (E)	2	6.7
Have religious faith/trust/pray (E)	2	6.7
No suggestions	2	6.7
Get comfort/support from family/others (E)	2	6.7
Call regarding status on the waiting list (P)	1	3.3
Just keep waiting (E)	1	3.3
Get information about the surgery (P)	1	3.3
Search for inner strength (E)	1	3.3

Note. Some subjects cited only a best suggestion, whereas, some subjects reported more than one other coping strategy.

P = Problem-focused; E = Emotion-focused.

Table 28.

Distribution of Respondents According to Best Mode of Coping Suggested for the Waiting Period

Coping Mode	Frequency	Percent
Problem-focused	9	30.0
Emotion-focused	21	70.0
Total	30	100.0

Table 29.

Distribution of Respondents According to Other Mode of Coping Suggested for the Waiting Period

Coping Mode	Frequency	Percent
Problem-focused	8	26.7
Emotion-focused	9	30.0
Both	6	20.0

Note. Some subjects cited only a best suggestion.

Table 30.

Distribution of Respondents According to Overall Mode of Coping Suggested for the Waiting Period

Coping Mode	Frequency	Percent
Exclusively Problem-focused	3	10.0
Exclusively Emotion-focused	8	27.0
Both	19	63.0
Total	30	100.0

Adaptation

Waiting period impact.

To assess the impact of the waiting period on quality of life subjects were asked to rate its effect on the predetermined life aspects of health, family life, daily routines, social life, and leisure life. A five point ordinal rating scale was used with descriptive anchors of 1=not at all to; 2=very little; 3=somewhat; 4=a fair amount; and 5=a great deal. Table 31, presents a summary of these responses. The majority of subjects rated the waiting period as having little to no impact on health (20, 67%); family life (16, 53%); daily routines (19, 63%); social life (15, 50%); and leisure life (17, 57%). An average was obtained for each item with the following values: social life (2.8); family life (2.7); leisure and recreation and/or hobby life (2.6); daily routines and home responsibilities (2.5); and health (2.2). This analysis revealed that, although the impact across all aspects was still less than three or "somewhat", social life was effected the most and personal health was effected the least by the waiting period.

Table 31.

Distribution of Respondents According to the Impact of the Waiting Period on Quality of Life

Aspects of Life Impacted	Not at all 1	Very little 2	Some what 3	Fair amount 4	Great deal 5
Health	9 30.0%	11 36.7%	5 16.7%	4 13.3%	1 3.3%
Family Life	7 23.3%	9 30.0%	4 13.3%	6 20.0%	4 13.3%
Daily Routines	8 26.7%	11 36.7%	4 13.3%	3 10.0%	4 13.3%
Social Life	6 20.0%	9 30.0%	4 13.3%	6 20.0%	5 16.7%
Leisure Life	6 20.0%	11 36.7%	5 16.7%	5 16.7%	3 10.0%

Summary

This chapter has presented a profile of the individuals who waited an indeterminate period of time for CABG surgery, which included a description of the personal factors or demographic and biophysical characteristics; the situational factors or events that characterize the waiting period; as well as an exploration of cognitive appraisal which entailed the waiting period difficulties/benefits, coping strategies, suggestions/advice, and impact on quality of life. A discussion of these findings follows in chapter five.

CHAPTER FIVE

Discussion

This study represents a preliminary investigation to retrospectively describe the various facets of an indeterminate waiting period for CABG surgery, within Lazarus' framework of stress, appraisal, and coping. A set of survey questions was developed to elicit a profile of personal factors, situational factors, and to explore the process of cognitive appraisal as it pertained to this time frame. This final chapter summarizes the investigation by discussing its findings and presenting its limitations, implications for nursing practice, as well as recommendations for further research.

A Personal Factor Profile of Patients Who

Waited an Indeterminate Period of Time for CABG Surgery

Within the theoretical framework extraneous processes, conceptually defined as the personal factors of this sample, are proposed as playing an interactive role with situational factors and as mediators to the process of cognitive appraisal (Lazarus & Folkman, 1984). As such, these antecedents have been operationalized to include the selected demographic and biophysical characteristics that would describe a waiting CABG surgery population. Literature that specially examines the waiting period for CABG surgery is scant, nevertheless, possible explanations for the findings are now discussed.

Demographic Characteristics

Several demographic characteristics were selected to describe this patient population. These traits included: age, gender, marital status, occupation, and employment status. The demographic data indicates that a typical waiting CABG surgery patient could be characterized as a married, male between the ages of 50 and 81 years, who is either unemployed from a skilled job or retired during this time frame, and most likely maintains this employment status after CABG surgery. Dubyts (1988) gives a brief demographic profile of a sample of patients (n=9) during a protracted an indeterminate waiting period for CABG surgery. The results between these two investigations are similar for the characteristics of age, gender, marital status, and employment status. In comparing this data with that found in the literature it is also congruent with what is known about age and gender ratios for CABG surgery patients. That seven (23%) subjects were over the age of 70 is also consistent with the fact that age is no longer a deterrent in selecting candidates for this operative procedure (Bhattacharya et al., 1984; Gortner et al., 1988; Naunheim et al., 1988). The disproportionate gender ratio was also not unexpected as the vast majority of CABG surgery patients are male (Nair et al., 1989). The fact that the majority of subjects were living with a partner will be discussed in greater detail throughout the process of cognitive appraisal, as it appears that the spouse is effected by the patient and that the patient is effected by the spouse during the waiting period.

Waiting period unemployment has been accused of costing society a loss in individual productivity (Howell, 1990; Nord, 1990). Thirteen subjects in this investigation (n=30, 43%) and five subjects in Dubyts' investigation (n=9,

55%) were unemployed during this time frame. Eight of the subjects in this investigation continued to be unemployed after surgery. The data suggests that patients' subjective appraisal of their cardiac impairment was no longer the most frequently cited reason for unemployment after surgery. Rather, the presence of a preexisting chronic health problem prevented return to work for the majority of subjects.

After surgery the second most frequently cited reason for remaining unemployed was the perceived advice of the physician(s). Clancy et al. (1984) also found a significant relationship ($\chi^2=8.134$, $p=.004$) between the patient's perception that the physician(s) had instructed them to remain unemployed and return to work after surgery ($n=22$, 36%). As both these studies relied on the patient's perception of physician advice it is unclear whether this matched with actual instructions. Nevertheless, Clancy et al. (1984) suggest that if physicians fail to discuss the topic of returning to work patients may incorrectly interpret this as not being permitted to resume this form of activity.

Several other explanations for postoperative unemployment need to be considered. It is quite possible, considering the preoperative biophysical profile of some of the subjects, that returning to work would not be an option after surgery. As well, some subjects may not have reached a level of cardiac rehabilitation that would have enabled them to return to work by the time this information was elicited. The type of employment that the patient would be engaged in after surgery would also be a factor in deciding whether and/or when a patient would be allowed to return to work. A patient's employer may also be a confounding variable to postoperative employment status and for

various reasons the patient may not be rehired (Rapaport, 1982). One subject in this study who was employed full-time before surgery was only rehired on a part-time basis after surgery. The specific reason for this status change was not obtained. Rapaport (1982) cautions against equating failure to return to work with failure to improve the quality of life for the postoperative CABG surgery patient, suggesting rather, that a life free of symptoms may allow the patient to channel their renewed energies into attaining other important life goals.

Biophysical Characteristics

The biophysical characteristics chosen for this investigation have been extensively used as baseline information to describe subjects in various CABG surgery studies. Only Dubyts' (1988) study was found for comparison purposes of the biophysical variables: symptom duration and a history of a prior MI in a waiting CABG surgery sample. In this study symptom duration was coded as less than one year or more than one year. No range for symptom duration was obtained. This makes it difficult to compare the results with Dubyts' (1988) sample, where illness duration ranged from three months to ten years. For seven subjects in Dubyts (1988) study the onset of symptoms coincided with an MI. In this investigation 13 subjects had a history of a prior MI. In Dubyts' (1988) sample the frequency of prior MI was 77% and in this sample it was only 43%. The discrepancy between the findings may be the result of small samples, in both studies.

From a physiological perspective, high-risk patients (i.e. those with unstable angina; three vessel and/or left main disease; and poor LVEF) are the individuals with the most to gain from CABG surgery (Califf et al., 1988). The data reveal that all but one subject experienced angina that was precipitated by

minimal and/or no exertion (NYHA class III to IV); 26 (87%) subjects had documented evidence on coronary angiography of significant disease in three or more coronary arteries; eight (27%) subjects had significant disease in the left main stem; and out of the 19 subjects where LVEF was obtained, 13 (68%) had moderate (LVEF 30% to 49%) to severe (LVEF <30%) left ventricular dysfunction. Patients with left main stem disease, with or without stenoses of other vessels, are usually given surgical priority due to the critical nature of where this coronary stenosis is situated. Yet, in this study their mean waiting time was 71 days (median 74 days; range 24 to 232 days). Naylor et al. (1990) suggest that precedence be given to patients with coronary stenoses that put a large amount of myocardium at risk of ischemic damage when triaging a waiting list. Dubyts (1988) did not examine these illness-related variables and no other study could be found for comparison purposes.

The biophysical profile that emerged was not unexpected because over the past decade the incidence of left main coronary artery stenosis has increased, left ventricular function has deteriorated and fewer patients have been operated on for stable angina (Naunheim et al., 1988). This being the case, it is understandable that the waiting list will be composed of high-risk patients who are considered acceptable, if not urgent candidates with the most to gain from CABG surgery.

A Situational Factor Profile that Characterizes
an Indeterminate Waiting Period for CABG Surgery

Within the theory of stress, appraisal, and coping a stimulus-stressor causes disequilibrium within a person-environment relationship and effects the process of cognitive appraisal (Lazarus & Folkman, 1984). The personal factors

that have been described interplay throughout the encounter with the situational factors or waiting period events that characterize the phenomenon. Uncertainty is seen as a key construct within this theoretical assertion, because it is considered the most devastating consequence of waiting (Lazarus & Folkman, 1984; Leavitt, 1982). Time influenced uncertainty has been described as either temporal uncertainty or event uncertainty. The major differences between these two uncertainties relates to the probably of an event occurring and the time frame within which an event will occur (Lazarus & Folkman, 1984; Monat, 1976; Monat et al., 1972). Temporal uncertainty fits the definition of an indeterminate waiting period for CABG surgery, where the patient knows within a reasonable doubt that CABG surgery will take place, but the time frame is unknown. The other operational definitions for uncertainty included: expected waiting time; number and reason(s) for hospital admissions during the waiting period; number of surgery admission cancellations; number of surgical postponements and/or cancellations; and number of cardiac catheterizations performed during the waiting period.

Waiting Period Characteristics

Actual waiting time.

The mean actual waiting time for CABG surgery, in this sample, was 110 days (SD=111) with a range of 16 to 650 days. This conforms with the results of a national survey on admission waiting times reported by Jacobs and Hart (1990). From the 48 hospitals that responded to this survey mean waiting time for heart surgery, in Canada was 108 days (SD=84) with a range of zero to 365 days. The ranges were different between the two studies because there was one outlier in this investigation who waited 650 days. The recalculated mean,

excluding this individual, was 93 days with a range of 16 to 365 days. Jacobs and Hart's (1990) survey did not describe population characteristics so it is impossible to say whether the patient subsets are comparable, however, the mean waiting time in this study is very close to those across the country.

Jacobs and Hart (1990) also accumulated data on what hospital administrators thought was an appropriate waiting time for heart surgery (mean=54, SD=41, range 14 to 180). There is a striking difference, between what should and what does happen, with actual waiting times being twice as long as what is deemed appropriate for this population by hospital administrators.

Expected waiting time.

When subjects were questioned about their expected waiting time, eight (27%) thought their surgery should have been performed immediately. This finding may be due to the fact that all but one subject experienced angina with minimal or no exertion and recurrent symptoms were cited as one of the most frequent difficulties associated with the waiting period. Dubyts (1988) proposed that symptoms were the stimulus that reminded subjects of their disease and served as the impetus for "wanting to get it over with" and the desire to "get in" to have surgery as soon as possible.

Dubyts (1988) also states that as the waiting time became protracted, ambivalence set in, especially if the patient was asymptomatic. Only one subject in this sample felt he would have to wait forever because he perceived his condition to be stable. Other subjects (n=5, 17%) stated that the media coverage of the waiting period had coloured their expectations. There was no consistency, however, in these subjects' expected waiting times which ranged

from three weeks to as long as one year. Dubyts (1988) also found that subjects' perceptions were influenced by the media coverage of the mortality rates associated with waiting for CABG surgery leading to increased and intensified fear and anxiety. Waiting patients in Dubyts' (1988) study had been left to deal with these emotional reactions by themselves as the health care community was rarely a source of information and/or counselling for them during this time frame.

Although no study was found that compared expected and actual waiting times in this patient population, it is important to note that few (n=4, 13%) subjects had their expectations met. Several studies have examined expected-to-realized treatment benefits in the cardiac surgery patient population and have found that quality of life is negatively effected when expectations are not met (Flynn & Frantz, 1987; Gortner et al., 1988; Mayou & Bryant, 1987).

Hospital admission(s).

Four (13%) subjects remembered being admitted to hospital for cardiac reasons (i.e. chest pain or angina), during the waiting period. Data support the assumption that health care consumption can increase while the patient is waiting for surgery, because of the need to stabilize their underlying condition. The CASS Principle Investigators and their Associates (1983), Dubyts (1988), and Zyzanski et al. (1981) found that cardiac related hospital admissions in the CABG surgery population had a negative effect on the patient's quality of life.

Admission and/or surgical postponement(s) and/or cancellation(s).

An event that may contribute to waiting period uncertainty is the possibility of unforeseen postponements and/or cancellations of either the admission for surgery or the actual surgery itself. Six (20%) subjects had

surgery postponed and one (3%) subject had surgery cancelled. No study was found which addressed this issue. This finding, however, substantiates what is known to happen in clinical practice as well as what has been documented by the news media as a variable of the waiting period.

Repeat cardiac catheterization(s).

When patients first see the cardiac surgeon in consultation they have all undergone coronary angiography to document their coronary anatomy and pathology. It is common practice, at the institution from where this sample was drawn, to repeat this invasive procedure prior to CABG surgery, if the patient has waited for more than six months. Four (13%) subjects underwent repeat coronary angiography. This finding supports the clinical observation that repeating cardiac catheterizations on waiting patients is current practice.

The situational profile that emerges from the data is that of a CABG surgery patient with a variable actual waiting time which rarely meets expectations. During the waiting period there is a small chance that the patient will be admitted to hospital for angina or chest pain. As part of the waiting experience the patient has a 20% chance of being scheduled and then "bumped" from having imminent surgery and/or a three percent chance of having surgery cancelled and being forced to continue waiting. After waiting approximately six months for surgery the chances are highly likely that a repeat coronary angiogram will be done before surgery will be performed.

This profile illustrates events that constitute the waiting period for the elective CABG surgery patient. The actual or probable occurrence of these events are assumed to create an uncertainty about this experience and influence how the individual will cognitively appraise the stimulus-stressor.

Cognitive Appraisal Process of an Indeterminate Period Waiting Period

According to the theoretical underpinnings of this investigation, cognitive appraisal is an individualized evaluative process that involves assessment, management, reevaluation, and adaptation of a stimulus-stressor in terms of its significance to well-being (Lazarus & Folkman, 1984). Each component of this construct was explored from the focus that the indeterminate waiting period for CABG surgery had served as a stimulus-stressor. There are many similarities between Dubyts' (1988) phenomenological findings, to the lived experience of waiting a prolonged and indeterminate period of time for CABG surgery and this investigator's retrospective findings of the same phenomenon. Comparisons have already been drawn between these two studies in the discussion of personal and situational factors. However, the similarities are even more striking when the process of cognitive appraisal is examined. Dubyts' (1988) work will, therefore, be used extensively throughout the discussion on primary appraisal, secondary appraisal, and adaptation.

Primary Appraisal

Primary appraisal is the mental process used by an individual to attach significance to a stimulus-stressor (Endler & Edwards, 1982; Haan, 1982; Lazarus & Folkman, 1984). This meaning forms the basis by which the stimulus-stressor is categorized as benign, irrelevant, or stressful (Folkman, 1984; Folkman & Lazarus, 1980, 1985; Lazarus & Folkman, 1984). It is an underlying assumption of this investigation that the indeterminate waiting period for CABG surgery was a stimulus-stressor appraised as stressful. This being the case, it would be have been subcategorized as a harm-loss, a threat, or a challenge. Lazarus contends that threat refers to the anticipation of harm or

loss (Folkman & Lazarus, 1980, 1985; Lazarus & Folkman, 1984). The questions in the survey pertaining to the waiting period difficulties address this theoretical point. Challenge, on-the-other-hand, refers to the potential for personal growth, mastery, or gain (Folkman & Lazarus, 1980, 1985; Lazarus & Folkman, 1984). The benefits that the subjects recalled experiencing, as a result of the waiting period, are seen within this theoretical context. In accordance with the theoretical framework, whether the indeterminate waiting period was assessed as threatening or challenging, primary appraisal would have been shaped by the personal and situational factors that have been described.

Waiting period difficulties.

Threat, defined as waiting period difficulties, was an overwhelming feature of the indeterminate waiting period for CABG surgery. Of the 30 subjects, 27 (90%) were able to verbalize at least one difficulty or threat they had encountered during their exposure to this phenomenon. These responses were considered to be their greatest difficulties. However, 24 subjects also recalled experiencing other difficulties associated with this time frame. This yielded a total of 12 separate difficulty or threat items. The prevailing affective component associated with these difficulties was fear. This emotional reaction has also been found as a dominate feature in other investigations of the waiting period for cardiac surgery (Cozac, 1988; Dubyts, 1988; Kennedy, 1966; Morgan, 1971; Rakoczy, 1977) and is supported by the theoretical contention that threat appraisal precipitates fear (Lazarus & Folkman, 1984). Each of the difficulties elicited through retrospective self-report will be discussed in view of the literature.

Fear of missing the call - Overall this was the most frequently recalled difficulty (n=17, 57%) and the second most frequently cited greatest waiting period difficulty (n=6, 20%). On first glance, this finding was surprising because the researcher has clinical knowledge that patients are informed at the outset of the waiting period that persistence will be used in reaching them when their time for surgery has finally arrived. The finding that so many subjects had difficulty believing this to be the case also surfaced in Dubyts' (1988) study and has been documented as a concern in the literature. Subjects in Dubyts' (1988) study feared missing their "turn" for surgery as the waiting period became prolonged. Whereas, Allender et al. (1983) reported this as a source of concern for patients awaiting heart transplantation. These findings may support the notion that uncertainty is a prevailing characteristic of an indeterminate waiting period.

Fear of MI and/or death - This was the most frequently cited greatest difficulty (n=8, 27%) and it placed second as an overall difficulty (n=16, 53%) associated with the waiting period. This finding can best be explained by reexamining the biophysical characteristics contended with during the waiting period. It is proposed that severe (NYHA class III) and debilitating (NYHA class IV) angina experienced by 29 (97%) of the subjects as well as a previous history of an MI (n=13, 43%) may have helped shape this threat appraisal. Studies have found that patients expect CABG surgery to prolong life and prevent an MI (Gortner et al., 1985, 1989; Mayou & Bryant, 1987), and that they believe treatment delays cause them more harm than the actual surgery (Gilliss et al., 1985). In clinical practice, the surgeon informs the patient about the risks and benefits of CABG surgery at the outset of the waiting period. CABG surgery

is known to reduce the occurrence of an MI and/or death especially in patients who have reduced left ventricular function, stenosis of the left main stem and/or severe triple vessel disease (Alderman et al., 1982; Cutter et al., 1982; Gersh et al., 1989; Hurst et al., 1978). These are the biophysical characteristics that describe the majority of this sample and they form the basis for the assumption that knowledge of the surgical benefits may have contributed to the fear of MI and/or death during the waiting period. This fear has also been documented as a waiting period threat by other investigators. It was reported as the most significant threat in Dubyts' (1988) study as patients waited a protracted period of time for CABG surgery. Penckofer and Holm (1984) also found that after CABG surgery, subjects' recalled being overwhelmed by a fear of having an MI or of suddenly dying while waiting for their operations. This fear has also been voiced as a threat experienced by spouses' while their mates waited to have CABG surgery (Cozac, 1988).

Recurrent symptoms - It was not surprising that this difficulty was the second most frequently cited (n=6, 20%) greatest difficulty and tied for second place with fear of an MI and/or death as an overall waiting period difficulty (n=16, 53%). The biophysical profile reveals that subjects were experiencing fatigue, chest pain and/or dyspnea with minimal or no exertion during the waiting period. Symptoms, according to Cronin (1990), are laced with subjective meaning and their presence and recurrence may cause a perception of illness. Clarke (1984b) proposes that such a perception will influence primary and secondary appraisal in a negative manner, especially if there is uncertainty about the nature of the illness. Penckofer and Holm (1984) reported that preoperative angina had discouraged their subjects about life in general

because this recurrent symptom had placed physical restrictions on them. Researchers have also documented that patients expect a benefit of CABG surgery to be freedom from pain and symptom relief (Flynn & Frantz, 1987; Gortner et al., 1985, 1989). Not only is this an expectation, it is also a realization of many postoperative CABG surgery patients (Flynn & Frantz, 1987; Gortner et al., 1985, 1989; Penckofer & Holm, 1984; Wilson-Barnett, 1981).

Putting life on hold - Subjects in this investigation as well as in Dubyts' (1988) tended to see the waiting period as a temporary aberration in their life, causing them to delay social and family activities until after surgery. It is probably because this temporary state is also indeterminate, that it was the fourth greatest difficulty (n=2, 7%) and why almost one half of the sample cited it as an overall waiting period difficulty (n=14, 47%). Most participants in Dubyts' (1988) study described their life as being, to some extent, on hold and equated the waiting period to wasted time. This theme has also emerged from investigations into the experience of waiting for cardiac transplantation (Buse & Pieper, 1990; Mishel & Murdaugh, 1987). Gortner et al. (1985, 1989) found that patients expected CABG surgery to allow them to return to former activities.

Impact on the spouse/family - It was expected that this item would surface as a waiting period difficulty (n=8, 27%), because the spouse and family are irrevocably involved in the waiting experience (Rakoczy, 1977). Numerous investigators have drawn attention to the reciprocal relationship between spouse/family and patient during an episode of illness (Artinian, 1989; Cozac, 1988; Gilliss, 1984; Gortner et al., 1988; Jenkins et al., 1983; Jillings, 1978; Radley & Green, 1986; Stern & Pascale, 1979; Wilson-Barnett, 1981). Dubyts (1988) pointed out that because the waiting period was impacting the

spouse/family it was also compounding the stress experienced by the patient. Penckofer and Holm (1984) propose that it is the self-obsession of the patients before CABG surgery that impacts their satisfaction with family life. Patients have also been known to vent their frustrations on the spouse/family when waiting without a time frame for cardiac transplantation (Allender et al., 1983). Artinian (1989), Gilliss (1984), and Stanley and Frantz (1988) suggest that spousal responsibilities increase during the entire cardiac surgery experience and Pieper et al. (1985) go as far as to propose that the waiting period for CABG surgery may be even more difficult for the spouse than for the patient.

Lack of information - Nurses have concerned themselves with providing patients with pre and postoperative information (Marshall, Penckofer, & Llewellyn, 1986), and research has demonstrated that it is effective in enhancing the patient's sense of well-being (Lindeman, 1973; Miller & Shada, 1978). Even though this was a great difficulty for only one (3%) person and an overall difficulty for six (20%) participants, it is disconcerting to discover, as Dubyts (1988) and Coombs (1987) have, that patients lack information during the waiting period. Mishel (1984) found that lack of information was related to uncertainty ($r=.50$, $p<.001$) and postulates a reciprocal relationship between these two factors. This proposition along with anecdotal observation that patients often endure the wait with little or no information after the initial surgical consultation may help explain why this item was cited as a waiting period difficulty. Dubyts (1988) found that health care professionals rarely served as a source of information for waiting CABG surgery patients or that they had even bothered to inquire about their informational needs. This apparent deficit on the part of the cardiac surgery team may be related to the fact that they too lack

information to answer the patient's fundamental question "when will my surgery take place". Mechanic (1977) states that not having all the answers is no excuse for health care professionals to be vague or evasive when patients need information. It is asserted that patients who are dissatisfied with situational uncertainty may seek out other, possibly unreliable or conflicting sources of information. If health care professionals are not available to sort out or explain this new found information the patient is likely to feel even more uncertain and dissatisfied. Health care professionals, therefore, need to be cognizant of the fact that when dealing with the waiting patient, they may be able to allay some of the uncertainty that is inherent in this situation by providing information that addresses the subjects various concerns.

Fear of actual surgery - It was surprising to find that the fear of having the surgery was only cited by one (3%) subject as a greatest difficulty and by a total of five (17%) participants as an overall difficulty. The investigation's retrospective design may have contributed to this low reported frequency. Had the question been posed during the waiting period, as Dubyts (1988) did, the results may also have revealed that the prospect of having CABG surgery generated appraisals of threat by all subjects. Lazarus and Folkman (1984) contend that as a stressful event becomes imminent its appraisal is intensified. Pieper et al. (1985) would agree with this theoretical statement, as they found the concern associated with CABG surgery remained "awesome" for their male subjects and did not appear to be influenced by the waiting period. However, in this investigation, by the time the data was elicited, imminence was no longer a factor and all subjects were recuperating from successful CABG surgery.

Being in limbo and/or isolated - This difficulty was not cited as a greatest difficulty, yet five (17%) saw it as a threat associated with waiting. Dubyts (1988) talks about a commonly appraised waiting period threat called loss of freedom. This item is related to the first difficulty discussed (i.e. fear of missing the call) and would be congruent with Dubyts (1988) supposition that loss of freedom was related to the uncertainty surrounding the phenomenon. Wallwork and Caine (1985) also draw attention to the finding that there was improvement in the quality of life for patients after CABG surgery because social isolation had decreased from what had been reported by their subjects before surgery.

Some subjects may isolate themselves to avoid the well-meaning but bothersome inquiries from family and friends about why they have to wait for surgery. Gilliss (1984) reported a similar reason why patients isolated themselves after cardiac surgery. This isolation intensified if they perceived that there were inconsistencies between the stories their friends had told them about CABG surgery and their own recovery. The rationales that have been presented for why this item was recalled as a waiting period threat may be linked to Mishel's (1984) finding that uncertainty and being isolated from others are positively related ($r=.22, p<.01$).

Lack of personal control - Not feeling in control over their waiting situation was a difficulty that surfaced a total of four (13%) times and only once (3%) as a greatest difficulty. This low frequency was surprising because from anecdotal experience patients appear to find this aspect of the waiting period particularly problematic. Feeling a lack of control has been documented in the literature as a major stressor associated with cardiac surgery (Bradley & Williams, 1990; Gilliss, 1984). This stressor represented a "no control" situation

for Dubyts' (1988) subjects and engendered feelings of helplessness. Again, the retrospective nature of this investigation, with the subjects no longer in this "no control" situation may have contributed to this low frequency. Or, it may be that this particular sample of waiting CABG surgery patients did not feel as threatened by this aspect of an indeterminate waiting period. Lazarus and Folkman (1984) suggest that the issue of control is multifaceted and a stimulus-stressor appraised as threatening does not necessarily mean that the individual is void of all personal control. They assert that when a person knows there is nothing to be done to alter a perceived threat, such as would be the case with an indeterminate waiting period, they can still fall back on the belief that they have the capacity to control other aspects of their lives.

Fear of being cancelled - One (3%) subject cited this as greatest difficulty, and overall this was a difficulty for two (7%) subjects. Although this appraised threat would appear to be similar to the fear of missing the call, it is a unique feature of this phenomenon. Even after patients are slated for surgery they are informed that they still face the possibility of repeated, unforeseen postponements and/or cancellations. On reexamining the situational profile it is apparent that this possibility became a reality for several subjects. It was an unexpected finding, however, that so few subjects cited this as a waiting period difficulty. A possible explanation may be that being informed of its possible occurrence provided them with information that eased threat appraisal of this situational factor.

Taking medications - Patients awaiting CABG surgery are often on a maximum tolerated regime of medical therapy (Gray et al., 1990) to control residual angina, arrhythmias, and/or hypertension (Frick et al., 1979). One (3%)

subject saw this as the greatest waiting period difficulty. This item has also been documented as an illness-related stressor associated with CABG surgery (Carr & Powers, 1986). Mishel (1984) found that problems with medications was associated with a higher level of uncertainty ($r=.20$, $p<.05$). Patients have also equated reducing the amount of medication they will have to take postoperatively as an expected benefit of cardiac surgery (Gortner et al., 1985, 1989). This benefit has also been realized by CABG surgery patients as the use of certain drugs are markedly lower postoperatively (CASS Principle Investigators & Their Associates, 1983). The low reported frequency of this difficulty may then be explained by Dubyts' (1988) finding that medications were seen as a precautionary and by the fact that taking medications was also seen as a coping strategy in this investigation. Viewed from this perspective, taking medications may have been perceived as being helpful, reducing the chances that it would also be appraised as a threat.

Financial difficulties - One (3%) subject cited this as an associated difficulty of the waiting period. This contradicts Dubyts' (1988) finding that all waiting CABG surgery patients ($n=9$) appraised a compromised financial situation to be a stressor associated with this time frame. Other researchers have also found this to be a concern of cardiac patients (Bedsworth & Molen, 1982; Pieper et al., 1985; Stanley & Frantz, 1988). These are American studies and the cost associated with their health care system may have contributed to this identified stressor. The low frequency with which this was cited as a waiting period difficulty may be related to the fact that eight (62%) of the 13 subjects who were unemployed during the waiting period were receiving some form of unemployment benefits. Some of the unemployed subjects also returned to

work (n=5, 38%) by the time this survey was conducted and financial difficulties may no longer have been a perceived stressor for those individuals.

This section of the discussion chapter has presented the perceived threats of the patients who waited an indeterminate period of time for CABG surgery. The construct, primary appraisal, however, is conceptualized to involve cognitive appraisal of a stimulus-stressor, not just from the angle of threat but also from the perspective of challenge. To discover whether patients were able to appraise an indeterminate waiting period as a challenge they were asked to recall if this experience held any benefits.

Waiting period benefits.

The majority of respondents (n=15, 50%) indicated no perceived benefits associated with this phenomenon. This finding is congruent with the weak theme of gain that Dubyts (1988) found when investigating the prolonged waiting period for CABG surgery. The perception of loss or threat was the overwhelming appraisal of this stimulus-stressor in both these investigations. Nevertheless, seven items were generated from content analysis of this question and appeared to support the theoretical assumption that a stimulus-stressor may be appraised as both a threat and a challenge. The benefits or challenges identified by this sample were: getting comfort and support from family and/or others; putting their lives and personal affairs in order; making healthy lifestyle changes; talking to waiting and/or former CABG surgery patients; not having to face imminent surgery; removing the fear of actual surgery; and thinking things through. It is interesting to note that several benefit items were polar statements to the difficulties already discussed. Examples of these items include: (1) getting comfort and/or support from family and/or others

as opposed to being socially isolated; (2) not facing imminent surgery as opposed to fear of missing the call and fear of being cancelled; and (3) removing fear of actual surgery as opposed to having fear of actual surgery. There are even conflicting differences in what some subjects consider as a benefit. On-the-one-hand, one (3%) subject who feared surgery saw the indeterminate waiting period as a benefit, because this threat was not appraised as being imminent. On-the-other-hand, another (3%) subject found the waiting period allowed time to remove the fear of actually having surgery. These findings support the theoretical assertion that stress can mean different things to different people (Lazarus & Launier, 1978) and that individuals respond to an identical stimulus-stressor with different reaction patterns and processes (Chan, 1977).

The benefits getting comfort and/or support from family and/or others; putting life and personal affairs in order; making lifestyle changes; talking to other CABG surgery patients; and thinking things through were all cited as coping strategies in this investigation. The fact that some individuals saw these items as waiting period challenges and others as waiting period coping strategies, would support the theoretical assumption that primary appraisal does not necessarily precede secondary appraisal and that challenges may provide the answer to the question "What if anything can be done about it?" (Lazarus & Launier, 1978; Lazarus & Folkman, 1984). There is an ongoing, dynamic relationship between primary and secondary appraisal and they merge to shape the meaning of every encounter (Folkman, 1984; Folkman & Lazarus, 1980). These items will be explored in the following section on secondary appraisal. However, before leaving the discussion on the appraisal

of challenge, a further word on the benefits of not having to face imminent surgery and removing the fear of actually having surgery.

Not facing imminent surgery - Cardiac surgery has been repeatedly demonstrated to be a stimulus-stressor perceived as a threat of great magnitude (Blacher, 1987; Cohen, 1982; Dubyts, 1988; Rakoczy, 1977; Reimer-Kent, 1990). Christman (1990) contends that in some situations certainty may be more aversive than uncertainty. This may be a possible explanation for the finding that a benefit of the waiting period was seen as not having to face imminent surgery. Waiting may have fostered uncertainty in these individuals and been less threatening than the certainty of CABG surgery. Lazarus and Folkman (1984) also speak about the concept of imminence and propose that as an aversive event approaches threat appraisal intensifies.

Removing fear of actual surgery - The approach to cardiac surgery has been documented as a blend of anxiety and pleasure (Morgan, 1971) resulting in few voiced concerns about the actual surgical experience (Dubyts, 1988; Gilliss, 1984; Radley & Green, 1985; Reimer-Kent, 1990). Words to describe the reaction to this waiting period tug-of-war or ambivalence are "relief and fear" (Dubyts, 1988) and "both a blessing and a curse" (Cozac, 1988).

Findings from this study and others support the proposition that threat and/or challenge are not mutually exclusive appraisals (Folkman, 1984). Nevertheless, when faced with a stimulus-stressor that has been primary appraised as stressful further analysis takes place in the form secondary appraisal, also known as coping.

Secondary Appraisal

This process evaluates what physical, social, psychological, and material resources are available to manage the demands of a stressful encounter (Folkman, 1984). "Such coping efforts serve two main functions: the management or alteration of the person-environment relationship that is the source of stress (problem-focused coping) and the regulation of stressful emotions (emotion-focused coping)" (Folkman & Lazarus, 1980, p. 223). This construct was operationalized as the thoughts and/or actions subjects recalled using to manage the indeterminate waiting period for CABG surgery. The Jalowiec Coping Scale (Jalowiec, Murphy, & Powers, 1984), which is predicated on Lazarus' theory of stress and coping, proved to be a helpful framework for content analyzing and categorizing these responses. There were many similarities between what Jalowiec had selected as coping strategies from the literature and what were cited as coping strategies by the respondents. Categorization of the coping data was kept to a minimum and involved distinguishing whether each of the 25 separate coping strategies served a problem-focused or an emotion-focused function. Managing the data in this manner revealed (1) the unique repertoire of thoughts and/or actions used to manage the indeterminate waiting period for CABG surgery; (2) the function or mode of these strategies; and (3) the preferred mode of coping with this time frame. Findings, on coping with the phenomenon, are discussed in relation to the literature and are based on the theoretical assumption that secondary appraisal was shaped by primary appraisal, as well as by the personal and situational factors that have already been discussed.

Waiting period coping strategies.

There were a wide range of diverse coping strategies that patients used to help manage the waiting period. Waiting, as a stressor, has been proposed by Lazarus and Folkman (1984) to cause individuals to use coping strategies such as "distancing themselves psychologically, avoiding thoughts about the threat, denying its implications, looking for information that might reveal something relevant on which other coping strategies might be predicated, and seeking and responding to feedback from actions and thoughts already entertained or acted on" (p. 147). The separate coping strategies that were elicited through subjects self-report supported this proposition. These strategies will be discussed from the perspective that they either altered (problem-focused coping mode) or palliated (emotion-focused coping mode) the troubled transaction (Lazarus & Launier, 1978).

Problem-focused coping mode.

From the responses to the coping questions 8 (53%) items that were cited as the best strategy and 13 (52%) items that were identified most frequently served a problem-focused function. These strategies included the following:

Stayed by the phone - This item was cited as one of the second best strategies (n=3, 10%) and as the second most frequently cited overall strategy (n=10, 33%) for handling the waiting period. That so many subjects felt compelled to stay by their telephones is unsettling. In clinical practice, patients are specifically instructed not to stay by the phone because the wait is indeterminate and possibly of some duration. This sample of patients obviously had difficulty accepting this recommendation and this may relate to the

uncertainty that characterizes this time frame. Researchers have also found this tactic used in patients awaiting CABG surgery (Dubys, 1988) and cardiac transplantation (Allender et al., 1983). Lack of information, a prevailing difficulty in this investigation, and lack of trust about this phenomenon are presented as possible explanations for this finding (Dubys, 1988).

Talked to other CABG surgery patients - As discussed in the previous section, this strategy was also cited as a benefit of the waiting period. As a coping method it was mentioned as one of the fifth ($n=7$, 23%) most frequent overall items and as the third ($n=2$, 7%) best item. The researcher did not anticipate how infrequently this tactic would be recollected as a strategy for dealing with the waiting period. This assumption was based on the literature review which indicated that talking to former patients was a valued and extensively sought after method of coping used by cardiac surgery patients (Coombs, 19; Dubys, 1988; King, 1985; Rakoczy, 1977) and their spouses (Cozac, 1988). King (1985) suggests that former patients provide waiting patients with a marker against which to measure progress. Information from former patients has also been shown to ease the troubled thoughts that waiting patients may have about the cardiac surgery experience (King, 1985). Dubys (1988), however, points out that not all waiting CABG surgery patients actively seek information because informational needs are uniquely individual.

There are several plausible explanations for the fact that talking to other CABG surgery patients was not cited more frequently as a coping strategy. The first reason may be a pragmatic one, namely lack of opportunity. This issue relates to the fact that no formal system is in place to bring waiting patients into contact with other patients. As well, this sample came from a large, widely

dispersed geographical area. As such, subjects in remote or rural areas may not have had excess to other patients with whom they could confer. The second reason may be a theoretical one, namely uncertainty. The supposition stems from the idea that there may be times when uncertainty is actually an opportunity and less aversive than certainty (Christman, 1990; Folkman et al., 1979; Mishel, 1988). One exploratory study was found that lends support to this assumption. Saunders and McCorkle (1987) found that newly diagnosed (n=6) lung cancer patients, with high symptom distress, avoided information seeking opportunities. This avoidance kept the certainty of their fatal prognosis at bay while simultaneously fostering uncertainty in an attempt to cope. This may also be found during temporal uncertainty (i.e. an indeterminate waiting period for CABG surgery). Most research that has examined this coping strategy in the cardiac surgery population has done so from an event, rather than a temporal uncertainty perspective. This is illustrated by King's (1985) study in which all subjects used information seeking when uncertainty was the greatest (i.e. after surgery was scheduled). There were other forms of information seeking used by the participants in this study and they included: calling the surgeon's office to inquire about the waiting list and inquiring about the surgeon's reputation.

Called regarding the waiting list - Three (10%) subjects identified this as their best coping strategy with one more recalling it as an associated strategy for a total of four (13%) times. That so few subjects cited this as a coping strategy was unexpected. Anecdotally this number should have been much higher as calls are frequently received by the cardiac surgery office from waiting patients. As was found by Dubyts (1988), these calls are made by patients in an attempt to obtain information about a more specific waiting time frame, and to

remind the surgeon that they are still waiting. The latter reason is also reported as a strategy used by patients awaiting cardiac transplantation (Allender et al., 1983). Dubyts (1988) claims that subjects in her study who called the surgeon felt they received unfair treatment and false reassurances of when surgery would take place. However, the need to call stemmed from a virtual lack of contact or support from the health care team during the waiting period (Dubyts, 1988). It may be that subjects in this investigation (1) did not use this strategy; (2) did not find it useful, or (3) did not recollect having used it.

Inquired about the surgeon's reputation - Only one (3%) subject reported inquiring about the surgeon's reputation. Dubyts (1988) does not give the frequency with which subjects used this strategy, but states that information seeking can include obtaining knowledge about the surgeon who would be performing the CABG operation. The low frequency with which this strategy was cited may relate to the fact that subjects often complete this type of investigation before their first visit to the surgeon.

Continued to live a normal life - Overall, seven (23%) subjects identified this as a coping strategy, with one (3%) of these subjects saying this was their best strategy. Dubyts (1988) and King (1985) both found that subjects awaiting CABG surgery used this method to maintain a sense of normalcy and control over their disrupted lives. Both these researchers speculate that such endeavors spring from the uncertainty associated with waiting. This perceived uncertainty in this sample may be tied to waiting period events that may be encountered or to illness-related facets such as symptom severity. Dubyts (1988) states that it was probably the occurrence of symptoms that made long range planning impossible and contributed to the patients uncertainty.

Made healthy lifestyle changes - A total of six (20%) subjects stated that addressing their risk factors for heart disease by making healthy lifestyle changes was a behavioral way they managed the waiting period. One (3%) of these subjects also gave this as a best strategy. This insight and action on the part of these subjects was encouraging, as was the fact that some participants also cited this as a waiting period benefit. It is the researchers belief that the indeterminate waiting period could be used in such a proactive manner, reducing, controlling, and/or eliminating the various risk factors of these patients. The patients who lost weight, stopped smoking, and kept active felt they were in better physical condition to go through their surgery and the recovery process. Eight (27%) subjects specifically stated that they *kept active* as a way of coping with the waiting period and for four (13%) of them this was the best strategy. Jillings (1978) has suggested that preoperative lifestyle may effect the patient's response to surgery and recovery. King (1985) found that after CABG surgery patients planned to change unhealthy habits. Such lifestyle modification, although commendable, has also been documented as a concern. Fifty percent of preoperative subjects (n=21) in Bradley and Williams' (1990) study, rated this as a moderate or great concern. This perceived difficulty may stem from the fact that risk factor abatement involves lifestyle as well as lifelong changes. The patient does not need to wait until after surgery, however, to ameliorate these health-related matters.

Viewed problem objectively - Three (10%) subjects identified that reflecting on the problem of waiting and putting it into perspective helped them deal with this stimulus-stressor. Two (7%) considered this to be their best strategy. This was similar to the waiting period benefit of having time to think

things through. Dubyts (1988) talks about subjects using the waiting period to make sense of their illness. Rakoczy (1977), on-the-other-hand, labels this type of analysis as the self-reflection phase of waiting in hospital for cardiac surgery. This strategy is also similar to *accepted situation and took things in stride* which was used by two (7%) of the subjects.

Controlled symptoms and/or took medication - Two (7%) subjects used this form of vigilance to cope with the waiting period. Neither of them gave this as a best strategy. This appears to be a low frequency when one considers that the large majority of subjects were functionally impaired by their angina. It may be that subjects had grown accustomed to their symptoms and control was taken for granted. Another explanation may relate to the fact that with surgery completed symptoms were no longer a stimulus. Christman (1990) claims that patients devise ways of monitoring their illness and its response to treatment as a way of managing uncertainty. Dubyts (1988) sees such strategies as a means of giving the patient a sense of control when there is so little control to be had during the waiting period.

Watched self for symptoms - This is also a vigilant strategy that is similar to the one just discussed. Only one (3%) subject identified this as a best coping strategy. All subjects in Dubyts' (1988) study kept alert for noticeable changes in their progress.

There are two other problem-focused coping strategies that were infrequently mentioned. The first, given by one (3%) subject was *packed a suitcase to be ready for admission*. This strategy was deemed necessary because should the hospital call there would be no delay on the part of the patient to be admitted. This points to the uncertainty of the situation where

patients feel they need to remain in a constant state of readiness for imminent surgery even in the face of an indeterminate wait.

Prepared a will - This last problem-focused coping strategy was cited by one (3%) subject. When considering the magnitude of the proposed surgery and the fact that death is an associated operative risk (Blacher, 1983; Brownsberger, 1965) that this was cited as a strategy was not an unexpected finding. What was unexpected was how infrequently it was cited. This very specific strategy could also fit under the more general waiting period benefit called *putting life and personal affairs in order*.

Emotion-focused coping mode.

Didn't think about it - From all the separate items elicited from this sample this was the most frequently cited overall coping strategy (n=11, 37%). Three (10%) of these subjects also gave this as their best waiting period coping strategy. This finding was not unexpected and supports the theoretical assertion that during a wait, especially one that is shrouded by temporal uncertainty, avoidance tactics such as this one will be used (Monat, 1976; Monat et al., 1972; Lazarus & Folkman, 1984). Other investigators have also reported on this type of strategy within a waiting scenario. Cozac (1988) found that while spouses waited for their mates to come through CABG surgery they distanced themselves by not thinking about the surgery and diverted their attention to other facets of living. This strategy helped to make the wait tolerable.

Thought positively - This was cited as the third most frequent overall coping strategy for a total of nine (30%) times. This finding is supported by the research results of others. Dubyts (1988) found all subjects used the thinking

positively strategy and it was the only strategy that did not change over time in a longitudinal study by King (1985). Positive thinking is a coping strategy that is intended to reduce threat appraisal (Lazarus & Folkman, 1984). In King's (1985) study subjects gave the rationale for using positive thinking as a method for calming them down, alleviating worry, and helping in the recovery process.

Got comfort and/or support from family and/or others - This was identified a total of seven (23%) times as a coping item and twice (7%) as a best item. Ziemer (1982) proposes that benefits seem to accrue to those with social support systems. And although this is a complex concept, Swanson, Cronin-Stubbs, and Sheldon (1989) suggest that in combination with certain personal factors, social support may actually promote adaptation by buffering the deleterious effects of environmental stressors. This strategy has also been reported by other investigators. Dubyts (1988) notes that seeking and accepting support from others tended to serve both a problem-focused and emotion-focused function for dealing with the threats associated with the waiting period. King (1985), on-the-other-hand, found that the use of the social support strategy, turning to others, increased after CABG surgery. Pieper et al. (1985) found that during a predetermined waiting period for CABG surgery, men developed an emotional closeness to their spouse. This type of marital support was also documented by Radley and Green (1986).

There were some coping items which would fall within the definition for intrapsychic ways of coping. These included: tried not to worry; had religious faith and/or prayed; had faith in the medical profession; meditated and/or searched for inner strength; hoped for the best ; tried to relax; hoped the wait

would be over soon; listened to music/watched TV; and wished for the call. A further note on the strategies that are supported by the literature.

Had religious faith and/or prayed - One (3%) subjects gave this as a best waiting period coping strategy. Cozac (1988) found that a way in which spouses generated hope during their husbands CABG surgery experience was to have faith in God. This emotion-focused coping strategy also appears as an item in Jalowiec's Coping Scale which has been extensively used in nursing research.

Had faith and/or trust in medical profession - This was identified a total of four (13%) times by the subjects. For one (3%) of these individuals this was a best strategy. Both Dubyts (1988) and Rakoczy (1977) found that patients awaiting cardiac surgery expressed confidence or trust in the medical care they were receiving.

The concept of hope also surfaced in two of the emotion-focused strategies. Hope, according to Brown (1989), provides a means of coping with the stress of the situation by allowing the individual to believe that things will be better in the future. As a matter of fact, hope is proposed to exist only when such beliefs make a positive outcome seem possible, if not probable (Lazarus & Folkman, 1984).

Hoped for the best - This was elicited a total of two (7%) times and never as a best coping strategy. Dubyts (1988), Rakoczy (1977), and Reimer-Kent (1990) have all found that this type of hope is spoken of by waiting cardiac surgery patients. This is especially true in reference to their ultimate recovery.

Hoped the wait would be over soon - One (3%) individual specifically cited this as the best way the waiting period had been dealt with. This is

supported by this researchers earlier fieldwork (Reimer-Kent, 1990). Dubyts (1988) also reports that throughout their prolonged and indeterminate waiting period for CABG surgery, subjects' lived daily with the hope that their call for surgery would come. "Hopes that are not time-specific expand the possible and protect the person from disappointment when hope is not realized within a specific time" (Brown, 1989, p. 97). Brown (1989) goes on to explain that hope can be characterized as a concrete object, such as the relief of angina following CABG surgery, or by the temporality of a situation, such as time-specific versus not time-specific and short versus long-range planning. In this study, on reexamining the expected to realized waiting period duration, it is apparent that subjects rarely realized their expectations. This finding along with the prevailing uncertainty of the situation are presented as possible reasons why hope was not frequently recalled as a feature of the waiting period.

The discussion on secondary appraisal has so far presented the exploratory findings of the coping repertoires from subjects who had waited an indeterminate period of time for CABG surgery. Each elicited item has been discussed under the broad categories of problem-focused versus emotion-focused coping function. This dichotomy was generated from the work of Lazarus and has been extensively used in studies that examine stress and coping (Lazarus & Folkman, 1984). To reiterate the differences between these two coping modes the following definitions are presented. Problem-focused coping seeks to modify or eliminate the source of stress, to deal with the tangible consequences of the problem, or to actively change the self and, thereby, change the troublesome situation for the better (Lazarus, 1979; Lazarus & Folkman, 1984; Lazarus & Launier, 1978; Moos & Billings). Emotion-

focused coping, on-the-other-hand, does not alter the actual relationship between the person and the environment but rather it includes responses whose primary function is the management of emotional reactions to the stressor, thereby, helping to maintain equilibrium (Lazarus, 1979; Lazarus & Folkman, 1984; Lazarus & Launier, 1978; Moos & Billings). Both modes of coping may be used concurrently to manage the same stimulus-stressor (Lazarus & Folkman, 1984). An underlying theoretical assumption of the function of coping is that one mode is not better or preferred over the other (Lazarus & Folkman, 1984). Direct confrontation with the stressor is not always necessary for successful coping. (Felton et al., 1984).

Waiting period coping mode/function.

When coping has been examined in context of threat/challenge appraisal, a directionality emerges which suggests that the emotion-focused mode of coping will predominate, especially if there is a perception that nothing can be done to modify the situation (Lazarus & Folkman, 1984). The individual's personal and situational factors are purported as determinants for the mode or function of coping. Coping data from this investigation was, therefore, examined to assess: (1) whether subjects had used strategies with dual functions to cope with the waiting period and (2) what the prevailing mode of coping had been to manage this stimulus-stressor.

In response to the first question, it was found that overall subjects used both forms of coping. A full 50% (n=15) of the sample had used both emotion-focused strategies as well as problem-focused strategies to cope with the waiting period. There was a difference of only one subject between those individuals who were exclusively emotion-focused (n=7, 23%) and those who

were exclusively problem-focused (n=6, 20%). This finding supports the theoretical assertion that both forms of coping can be used interchangeably during a stressful encounter. Research has also documented this duality of the coping process with King (1985) finding that during the preoperative period for CABG surgery patients used what appeared to be contradictory coping strategies to deal with the same stressful event.

The answer to the second question is that subjects recalled using predominantly the problem-focused mode of coping to manage the waiting period. The findings show that 17 (57%) subjects were problem-focused as compared with 13 (43%) who were emotion-focused. Although the margin between these two numbers is small, this finding is contrary to the theoretical tenet that emotion-focused coping predominates. Folkman and Lazarus (1980) found, when analyzing coping that occurred as a result of everyday stresses, within a middle-aged community sample, that in general, subjects (n =100) used more emotion-focused forms of coping. This finding was further described as prevailing if it appeared as though nothing could be done to change the perceived threat and/or challenge. These findings were replicated when Folkman and Lazarus (1985) investigated their theory of stress and coping in undergraduate students (n=108) at three stages of a midterm psychology exam. Besides finding that subjects used a combination of coping modes at every stage of the examination process, these researchers also found the emotion-focused mode of coping to be more prominent during the waiting stage. Mishel (1984) also contends that emotion-focused forms of coping, such as avoidance, will be used to manage situations that are shrouded in uncertainty.

Other investigators have also commented on how appraisal influences the choice of coping mode. LaMontage and Pawlak (1990) examined the stress and coping of parents ($n=30$) with a child in a pediatric ICU. They found that overall emotion-focused coping was used 56% of the time and problem-focused coping 44% of the time by subjects to manage their identified stressors. The margin between these two numbers is also small and almost the reverse of what was found in this investigation. Of note, however, was the finding that subjects who identified uncertainty as their stressor used more emotion-focused forms of coping. Dubyts (1988) and Reimer-Kent (1990) also found that during the indeterminate waiting period for CABG surgery, emotion-focused coping tended to be rule. King (1985) comments on a form of emotion-focused coping called attention-deployment-avoidance which was the prevailing strategy used by patients waiting in hospital for CABG surgery. This finding supported the supposition, as it did in Folkman and Lazarus' (1985) study that direct action is not perceived as a useful method for dealing with waiting (King, 1985).

Why then did subjects in this investigation recall using predominately problem-focused coping? This finding may best be explained by the theory that purports waiting should cause emotion-focused coping. At the crux of Lazarus' theory lies the assumption that cognitive appraisal is a process shaped by an array of personal and situational factors with which an individual must contend while simultaneously appraising the significance of the stimulus-stressor to well-being and analyzing what coping strategies will be needed to most effectively ameliorate the situation. If this is the case, one need only reexamine these facets in light of this sample. First, from a biophysical perspective the vast majority of the subjects ($n=29$, 97%) were experiencing severe and/or

debilitating angina during the waiting period, some (n=13, 43%) had already experienced the potential ramifications of CAD (i.e. a prior MI), and eight (27%) had a potentially lethal stenosis of the left main stem coronary artery. These characteristics may have influenced the waiting patient in such a manner that they resorted to watching themselves for symptoms; controlling their symptoms and/or taking their medications; or even calling the surgeon's office about waiting list information. Second, when looking at the events that described the waiting period, one can see that actual and expected waiting times rarely coincided. Although, not a frequent occurrence, some subjects were hospitalized during the waiting period due to their cardiac condition and some realized that waiting could also mean repeated hospital and surgical cancellations and/or postponements. These associated features of the waiting period may have led to subjects keeping active; continuing to live a normal life; or accepting the fact that they would have to wait and taking it in stride. Third, the primary appraisal findings may also have contributed to this result. The most frequently cited threats were: fear of an MI and/or death; recurrent symptoms; and fear of missing the call. Such waiting period difficulties may have precipitated the use of strategies such as: staying by the phone; calling the surgeon's office to inquire about the waiting list; and watching out for and/or controlling symptoms. Fourth, many of the challenges or benefits of the waiting period such as: making lifestyle changes and/or talking to other CABG surgery patients were also cited as problem-focused coping strategies that were used during the waiting period. Although the magnitude of the differences between problem and emotion-focused modes of coping was not great, the subjects

recalled that they did more than just alleviate the emotional reactions engendered by having to wait for their surgery.

The process of secondary appraisal has been explored by eliciting, analyzing, and categorizing the self-report data of patients who had waited an indeterminate period of time for CABG surgery. This revealed that subjects used a variety of cognitive and behavioral efforts, from both modes of coping to manage, tolerate, and/or reduce the external and/or internal demands placed upon them as a result of this stimulus-stressor.

Reappraisal

For cognitive appraisal to be viewed as a process, it means that changes will occur within the person-environment relationship which will alter the individual's perception of the stimulus-stressor. This will lead to a reevaluation or reappraisal of the significance of the stimulus-stressor which in turn will influence subsequent coping efforts. Reappraisal was operationalized as the suggestions and/or advice that the subjects would give to other patients who find themselves waiting an indeterminate period of time for CABG surgery.

Waiting period suggestions/advice.

Lazarus and Launier (1978) affirm that secondary appraisal is more likely to be conscious and deliberate in anticipatory situations that emerge slowly and allow time for reflection. All participants were able to give the researcher at least one method they would suggest other patients use when dealing with the waiting period. Analyzing this data revealed the following findings:

(1) suggestions appeared to be more general than they were specific; (2) much of the advice duplicated the coping strategies that had been used by the subjects during their encounter with this stimulus-stressor, although, several

strategies that had been used were not suggested; (3) two strategies (one problem-focused and one emotion-focused) were suggested but had not been used; (4) both modes of coping were suggested; and (5) emotion-focused coping was the mode most frequently suggested. Possible explanations for these findings are now presented.

The finding that suggestions were more general than they were specific may be explained by the theoretical assertion that individuals are unique in their perceptions of both the significance of as well as the methods used for managing a stimulus-stressor (Lazarus & Folkman, 1984). This assertion was further supported by the comments of one subject who stated that it was very difficult to give advice to someone else because every one is so different. Subjects may have found it easier, then, to speak in generalities rather than in specifics.

There were six problem-focused strategies that subjects recalled using but which they did not give as suggestions for other patients. These omissions included: staying by the phone; watching for symptoms; controlling symptoms and taking medication; packing a suitcase to be ready for imminent surgery; preparing a will; and inquiring about the surgeon's reputation. From the emotion-focused mode of coping, three strategies were missing between those used and those suggested. These were: hoped for the best, listened to music and/or watched television; and wished for a call from the hospital.

The following is presented as some of the rationales to explain these findings. With secondary appraisal, one-third ($n=10$, 33%) of the sample cited staying by the phone as a strategy which they had used during the waiting period. Finding it missing from the suggestion list, however, was not entirely

unexpected. This may be related to the perception that staying by the phone had been an ineffective method for dealing with a waiting period that was indeterminate and beyond the limits of personal control. Reappraisal of the stimulus-stressor may have revealed that this was an inappropriate behavior. Now, in the postoperative phase of this experience the subjects may have forgotten about the symptoms they had experienced in days gone by; no longer needed to feel prepared for imminent hospital admission; no longer faced the threat of operative mortality; no longer needed to hope for the best; and now they could give first hand testimony of the surgeon's reputation. These suppositions may have contributed to the finding that subjects did not address these issues with reappraisal. The same rationale may explain why, just keep waiting its worth it, an emotion-focused coping strategy, was added to the suggestion list.

Only one new problem-focused strategy was suggested (i.e. getting information about what the actual surgery really entails). This was a specific coping suggestion that had not been part of the coping repertoire used by the subjects. That this was suggested may relate to the earlier threat finding that subjects ($n=4$, 13%) lacked of information associated with the waiting period.

Only one (3%) subject mentioned that current and/or future waiting patients should call the surgeon's office. This was surprising because it had been used as one of the second most frequently cited ($n=3$, 10%) best coping strategies. Dubyts' (1988) comments may shed some light on this finding. In her investigation subjects found themselves calling the surgeon's office despite the fact that they believed the exercise to be futile, however, this action may

have enhanced their sense of self control. This supposition may explain why the frequency with which this strategy was suggested declined on reappraisal.

It was not unexpected that both modes of coping formed the list of waiting period suggestions. This was also found to occur in secondary appraisal and is supported by previously cited theory and literature. The surprise lay in the finding that the majority of subjects ($n=21$, 70%) suggested coping strategies that were emotion-focused rather than problem-focused. This result is remarkably different from the finding that most subjects ($n=17$, 57%) recalled using problem-focused coping as their best mode for dealing with the waiting period. Support for this finding is presented in the following comments. While they were waiting subjects may have felt that using problem-focused coping gave them an element of control over their uncertain situation. On reevaluation, however, they may have realized that in fact this situation has very little if any control attached to it and dealing with the emotional reactions engendered by this stressor may have afforded them more protection from threat appraisal. This statement would receive theoretical support as Lazarus and Folkman (1984) contend that emotion-focused forms of coping are more likely to occur when threatening or challenging environmental conditions are appraised as being unchangeable.

Reappraisal, an important component of cognitive appraisal has been presented as the suggestions and/or advice former waiting CABG surgery patients would give to current and/or future patients who must deal with the same stimulus-stressor. The suggested strategies that emerged from the data were compared to the strategies that subjects had recalled using during their exposure with this encounter. Rationales for these findings were presented

mostly from a theoretical perspective, due to the lack of research that has examined this phenomenon, especially in relation to reappraisal.

Adaptation

The ultimate goal of the entire cognitive appraisal process is adaptation. The referents of this construct include aspects related to quality of life or the concepts morale, social functioning and somatic health (Lazarus & Folkman, 1984). Goosen and Bush (1982) define adaptation as “those constant, positive alterations which individuals make in their patterns of interaction to stimuli within the environment. These alterations perpetuate the survival of the individual and increase the individual’s utility, performance and pleasure within the chosen environment” (p. 34). As no study was found that directly examined adaptation in the waiting CABG surgery population, it was deemed necessary to explore this component of cognitive appraisal, albeit retrospectively. Adaptation was operationalized as the perceived impact of the waiting period on the patient’s health; family life; daily routines and home responsibilities; social life; and leisure, recreation, and/or hobby life, which were rated on a five point ordinal scale with the anchors of not at all (1) to a great deal (5).

Waiting period impact.

The most unexpected finding from this entire investigation came from an analysis of the impact questions. The waiting period was rated by the majority of subjects as having very little or no impact across all aspects of life, prompting the conclusion that this stimulus-stressor did not play a major disruptive role in the lives of these individuals. The researcher had anticipated finding the exact opposite. This assumption was based on anecdotal information, the literature, as well as the primary and secondary appraisal and reappraisal results the

have already been discussed. Each life aspect will be discussed and compared to findings in the literature.

Health - Twenty (67%) subject's rated this life aspect as impacted very little to not at all by the waiting period. This finding contradicts what has been documented in the literature. Packa (1989) states that the severity of a patient's symptoms and the perceived threat of an MI are major features that detract from personal goal attainment and thus, quality of life for the cardiac patient is effected. Flynn and Frantz (1987) found that quality of life was enhanced after CABG surgery when patient's were relieved of their symptoms and their morale was improved. This finding leads to the assumption that these independent variables were negatively effecting the preoperative or waiting CABG surgery patient. The personal factors discussed earlier in this chapter would support such an assumption as the vast number of subjects were living with incapacitating angina during the waiting period. Not only were subjects assessed as functionally disabled (NYHA class III to IV) by their symptoms, but over one half of the subjects (n=16, 53%) also identified recurrent symptoms as an associated waiting period threat. Cronin (1990) presents a corroborating proposition in asserting that patients with recurrent symptoms will have adjustment difficulties. Many of the subjects in this investigation also had a history of a prior MI, which would support the finding that the most frequently cited greatest waiting period difficulty was the threat of an MI and/or death. There is research, however, that refutes these suppositions. Brown and Rawlinson (1976) were surprised to find that the morale of patients after cardiac surgery was not significantly effected by the presence of other major health problems (i.e. duration of illness prior to surgery, NYHA functional classification

of preoperative angina, and other major chronic illnesses). They suggest that subjects' morale was determined by subjective appraisal of health rather than by objective indicators of their illness. Burckhardt (1985) also found that for patients (n=94) with arthritis, psychological variables served as mediators that buffered or enhanced the individual's quality of life so that the impact experienced from pain and functional impairment was not as profound.

Family life - Sixteen (53%) subjects rated the waiting period as having very little or no impact on their family life. This too was a surprising finding. Consider what has already been revealed about the waiting period and its effect on the spouse and/or family. The vast majority of the subjects (n=26, 87%) were living with a partner during the waiting period. The perceived negative effect of the waiting period on the spouse and/or family has already been reported (n=8, 27%) as an overall threat associated with this time frame. On-the-other-hand, six (20%) subjects saw their family as a source of support and cited this as a waiting period benefit or challenge. Seven (23%) subjects also used the support of their spouse and family as a waiting period coping strategy. These apparent contradictory findings may explain why this impact question was given a low rating. The literature documents the period before CABG surgery as having a profound effect of the spouse and/or family. For example, Penckofer and Holm (1984) found that patients were so concerned about themselves before CABG surgery that family life satisfaction was significantly impacted during this time frame. Ross et al. (1978) found that before cardiac surgery 58% of their subjects (n=95) indicated that as they waited for surgery their conditions deteriorated causing them to grow physically dependent on other members of the family. Stanley and Frantz (1988) reported

a similar finding when more than one half of the spouses' (n=29) in their investigation noted how surgery had freed their mates to function more independently. There was one study, however, that corroborates the findings from this investigation. Pieper et al. (1985) specifically examined the impact of the waiting period for CABG surgery and its perceived effects on life in general and on relationship with spouse and/or partner on men (n=29). These investigators found that subjects' rated the waiting period as having little effect on these quality of life aspects. These findings need to be prefaced by the information that subjects waited a short, predetermined period of time for CABG surgery. The results, however, suggested that it was not the wait but rather the surgery itself that had the greatest impact (Pieper et al., 1985).

Daily routines and/or home responsibilities - Here again, the impact of the waiting period was rated as having little if any effect (n=19, 70%) on this life aspect. This too was unexpected as earlier in the process of cognitive appraisal it was discovered that putting life on hold was the most frequently cited (n=14, 47%) overall waiting period difficulty. There were some subjects (n=7, 23%), though, who appraised an overall challenge of the waiting period as being able to put their lives and personal affairs in order. The fact that subjects rated this aspect of life on the low side may also be explained by the finding that both keeping active and continuing to live a normal life were problem-focused coping strategies that were either used (n=14, 47%) and/or suggested (n=11, 37%) as methods for dealing with the waiting period. Mechanic (1977) suggests that even though a situation may be appraised as threatening, adaptation can occur if the individual remains engaged in everyday activities and concerns.

Social life - One half of the sample (n=15) rated the impact of the waiting period as having little to no effect on their social life. Burckhardt (1985) contends that supportive relationships play a major role in determining perceptions of quality of life. Cwikel, Dielman, Kirscht, and Israel (1988) see social competence as a product of successful coping, which in turn may have a positive effect on health. Social resources and support are also seen as fundamental components to adaptation, in the theory of stress and coping (Lazarus & Folkman, 1984). Some subjects in this investigation did get comfort and support from their family and/or other individuals, citing this as an overall coping strategy (n=7, 23%) as well as an overall benefit or challenge (n=7, 23%) associated with the waiting period. This may explain why the waiting period was rated as having little or no impact on social life. But what about the other half of the sample who rated the waiting period as having a moderate to high impact on social life? For these individuals it may have been, as was found by Penckofer and Holm (1984), that preoperative angina prevented them from participating in social activities. Five (17%) subjects also recalled that an associated threat experienced during the waiting period was that of being in limbo or isolated. Withdrawal, Mechanic (1977), proposes erodes social contact and skills, results in maladaptive behavior and feeds a sense of hopelessness.

Leisure, recreational, and/or hobby life - Seventeen (57%) subjects gave a low rating to the effects of the waiting period on their leisure, recreation, and/or hobby life. Based on the review of the literature this impact rating was also unexpected. Again, most of the investigations that have addressed this specific aspect of a CABG surgery patient's life have done so postoperatively,

showing that with preoperative angina no longer present, patients are able to increase the time they spend on leisure, recreation, and/or hobbies (Penckofer & Holm, 1984; Ross et al., 1978; Stanton et al., 1984). The results discovered and already discussed from primary appraisal, secondary appraisal, and reappraisal of this phenomenon may help explain this finding. Subjects cited making lifestyle changes as a benefit or challenge ($n=2$, 7%) as well as a coping strategy ($n=6$, 20%) or suggestion ($n=5$, 17%) for managing the waiting period. For some of these individuals this meant maintaining a form of physical activity that could be accomplished within their physical limitations. This type of exercise served the dual function of reducing their risk factors for CAD and filling a recreational void. Other cited benefits and/or coping strategies such as continuing to live a normal life; keeping active; listening to music and watching television; and/or putting life and personal affairs in order may also have served to enhance leisure, recreation, and/or hobby life, and, thereby, adaptation during the waiting period.

The contradictory findings between these results and the those of Dubyts (1988) and previous field work conducted by the investigator (Reimer-Kent, 1990) need further discussion. Dubyts (1988) states that the wait, irrespective of duration, was negatively appraised and considered a distressing experience, because it engendered losses of its own, accentuated the perceived threat of the situation, and prevented the anticipated gains to be accrued from surgery. Subjects were found to have lost interest in aspects of life and they did not get pleasure from their usual activities. Reimer-Kent's (1990) field work also revealed that all aspects of the patient's life were impacted by the waiting period. The stimulus-stressor that faced subjects in all these studies was the

same and yet the expected negative effect of the waiting period on the quality of a patient's life could not be replicated. Several explanations are presented as possible answers to this discrepancy.

The first explanation is related to the retrospective design of the investigation. Both Dubyts (1988) and Reimer-Kent (1990) conducted examinations of the phenomenon before subjects had surgery. Dubyts' (1988) data was collected during the waiting period and Reimer-Kent's (1990) data was collected once the patient had been admitted for CABG surgery. By the time self-report data was collected, all subjects were well into the postoperative phase of their cardiac surgery experience. Since being exposed to the waiting period, subjects had undergone what many consider to be a much greater stimulus-stressor (i.e. the actual surgery). This being the case, the waiting period may have paled in comparison to the actual surgical event. Pieper et al. (1985) provide support for this assumption with the statement that waiting did not influence their subjects to the same extent as the awesome concern associated with the actual surgical experience.

The second explanation centers around the theoretical underpinnings of this investigation. The theory implies that when an individual is exposed to a stimulus-stressor either the person and/or the environment must change for effective coping and adaptation to occur (Lazarus & Launier, 1978). Johnson and Lauver (1989) suggest that the researcher interested in outcomes of coping take into consideration the time in the course of the experience when outcomes are assessed.

A third possible explanation rests with the scale itself. The aspects that were chosen to represent quality of life were selected from a review of the

literature. However, these items may not have conveyed the theoretical intent behind the construct adaptation and the scale may not have been sensitive enough to capture the impact of the waiting period. This was the only item in the IWPS that asked subjects to quantify predetermined aspects to the quality of their lives. More meaningful data might have been elicited if the subjects had been asked to qualify this dimension of adaptation. These self-proclaimed impact items would then lent themselves as content for future scale development.

A fourth explanation rests with the possibility that the waiting period really did not have a negative effect on the quality of the patient's life. Based on previous studies and qualitative data in this study, the researcher feels that this is the least likely explanation. The only way to refute this finding, however, would be to replicate the study.

The process of cognitive appraisal has been completed by discussing the adaptation or the influence of the indeterminate waiting period on different aspects of the patient's life. The unexpected finding of a weak impact across all aspect categories was discussed and explained in light of the theoretical and research literature. This latter task pointed to possible limitations of this investigation which will be expanded upon in the next section of this chapter.

Limitations

There are several limitations that need to be addressed concerning this investigation. As eluded to, in the previous section, one of the study's weaknesses has to do with the retrospective design. The major concern here is with the potential problem of data recall. In an ex post facto study by Zyzanski et al. (1981) longer periods of recall were found to be associated with forgetting

events and inaccurate reporting, by under rather than overestimating frequencies. The theoretical framework may also present some difficulties when the concepts of stress, appraisal, and coping are examined retrospectively. An underlying assumption in this type of research is that subjects will be cognizant of the associated stressors and/or methods used to manage the stimulus-stressor (Bargagliotti & Trygstad, 1987). Once the stimulus-stressor has been removed, however, these threats/challenges, coping strategies, and/or impacts may no longer be in the forefront of awareness (Bargagliotti & Trygstad, 1987).

A second major limitation is the self-report method. Certain information may have remained hidden if subjects found that recall was too painful and/or uncomfortable.

The external validity of this investigation is limited and relates to the fact that self-report data was retrospectively elicited from a small, nonrandom, convenient sample that was selected from approximately 20% of an accessible target population. The reader should, therefore, be cautious when extrapolating these results past the sample from which the information was derived.

Despite the study's weaknesses, some valid and interesting findings have been discovered about the phenomenon of waiting an indeterminate period of time for CABG surgery. In this preliminary investigative stage several implications for practice and suggestions for future programmatic research are presented.

Implications for Nursing Practice

Although the results of this investigation should be viewed as tentative, there were several findings that have implications for nursing practice. These

directives are of paramount importance considering that patient contact from the nursing profession is minimal, if not entirely nonexistent during this time frame. This obvious lack of health care must be rectified as the process of cognitive appraisal has pointed to areas that require nursing intervention. Patient contact is the most pressing issue. This contact should be provided by nurses who are proficient in the care of CABG surgery patient's and who work collaboratively with the patient's surgeon. Such a proviso would allow for patient assessment, education, and/or counselling. These interdependent nursing strategies will be discussed in greater detail.

Assessment - Ongoing patient assessment would be a multifunctional method for evaluating the waiting patient's quality of life. This would involve obtaining a current health history that would serve a pragmatic, triaging function. Nurses could assess whether the waiting patient's condition had deteriorated to the point where more urgent CABG surgery would be requisite. Working in collaboration with the patient's surgeon this up-to-date information would provide a cornerstone for building the operative schedule. Besides obtaining a current symptom status, a nursing assessment would also involve an examination of the process of cognitive appraisal. The data generated from this study could serve as an tool with which to conduct such an assessment. Nurses could use such a data base to develop an individualized nursing care plan built around the patient's response to the stimulus-stressor and the identified concerns which would be amenable to nursing intervention(s).

Education and/or counselling - The findings from this investigation revealed that patients had unrealized expectations concerning the duration of the waiting period; experienced threats such as lack of information and being in

limbo and/or isolated; managed the waiting period by putting their lives on hold, staying by the phone, talking to other CABG surgery patients, and getting comfort and support from their families and/or others. Dubyts' (1988) study revealed a two-edged problem where the waiting patients did not seek out the health care team for education and support and the health care team did not seek out the patient to ensure that their various needs were being met. Nurses, however, need to reach out, through ongoing contact with waiting patients and address their unique informational needs that may simultaneously enhance their sense of self-control, and build their trust and confidence. This research also revealed that the spouse and family were effected by the waiting period and that their perceptions of this time frame may also have impacted the patient's quality of life. Gilliss (1984) and Gortner et al. (1988) propose a model program of longitudinal, hospital-based nursing care that focuses on the patient, as part of a family unit, both during and after CABG surgery. This model would have validity if their definition were extended to include the indeterminate waiting period as an important component of the CABG surgery experience. Education provided during this time frame should imbue the patient and spouse/family with information that would lay the foundation for building realistic waiting period expectations. Counselling also falls within the domain of nursing practice and the need for comfort and support identified by the subjects needs to be addressed. This may require that the nurse bring current and former patients and their families who wish social support, counselling, and education together.

The ultimate goal of any of the implications for nursing practice is to aid the patient as well as the family to healthy adaptation amidst a stressful

encounter. Within the confines of the nursing process the effectiveness of any nursing intervention instituted as a means of assisting the patient through this experience needs to be evaluated. From evaluation would come the generation of ideas and questions for further practice based nursing research. There are, however, several recommendations for further study that can be made from the findings of this investigation.

Recommendations for Future Research

This retrospective investigation was an initial research step in clarifying the multivariate phenomenon known as the indeterminate waiting period for CABG surgery. In so doing, a scientific data base has been developed that describes the personal factors, the situational factors, and the process of cognitive appraisal associated with this time frame. For this phenomenon and its effects to be more fully understood, however, more research will be required. The following recommendations are, therefore, presented for further research.

It would be best to study this phenomenon prospectively. As pointed out in the limitations of this study, the retrospective design may have influenced some of the findings, especially those that asked for recall of the impact of the waiting period. A prospective, longitudinal design would be preferable. Such a design would adhere more closely to the theoretical underpinnings of this investigation as the data would be collected during subjects' exposure to the stimulus-stressor, revealing more precisely the dynamic process of cognitive appraisal.

To improve the external validity of the findings, it is recommended that further research investigate this phenomenon using a larger, less homogeneous, random sample. To achieve this goal may require a multi-site

approach. Such an endeavor is not unrealistic because waiting for CABG surgery is a health care problem effecting the lives of many Canadians and which is not expected to improve in the near future.

Once the study has been prospectively repeated, correlational research needs to be conducted that will move this phenomenon past exploration and onto explanation. Selected personal and situational factors could be examined as independent variables to the various components of the process of cognitive appraisal. This would require a more complex design with a larger more diverse sample.

There are also several recommendations for further use of the IWPS. This instrument was developed by the researcher to describe this population within the theoretical constructs and concepts of the investigation. Exploring the various components of the process of cognitive appraisal revealed numerous stressors and coping strategies associated with the stimulus-stressor. This data could be used to develop both a stressor and a coping scale.

With primary appraisal, respondents identified 12 difficulties and seven benefits experienced as a result of the waiting period. These responses could form the basis for the development of a stressor scale. The tool could be devised so that both the frequency and the intensity of the stressor would be documented. Subjects would be asked to rate how frequently they experienced each difficulty and/or benefit item. These responses would be collected by using a five-point Likert scale with anchors of never (1) to frequently (5). To elicit the degree to which each item was considered stressful would be measured with a five-point Likert scale with end-points of not at all difficult/beneficial (1) to extremely difficult/beneficial (5). To ensure content

validity of the instrument, subjects would also be asked to supplement the tool with threats and/or benefits they were experiencing but which were not part of the questionnaire. These responses could then be used for further stressor scale refinement.

A similar format could be used for the development of a coping scale. The 25 separate coping strategies identified from this investigation could be incorporated into a waiting period coping scale. Each item would be rated on a five-point Likert scale for frequency (not used at all to used a great deal) and helpfulness (not at all helpful to extremely helpful). As stated earlier in the discussion, however, this investigation utilized the Jalowiec Coping Scale as a framework for content analysis and categorization of the self-reported coping strategies. Many of these items were similar to the one's Jalowiec selected from the literature. It may be plausible, then, to modify the Jalowiec Coping Scale to include strategies which are unique to the experience of waiting. Examples from both modes of coping include: stayed by the phone and called the surgeon's office regarding the waiting list (problem-focused), and had faith and trust in the medical profession and wished the hospital would call (emotion-focused). However, whether an original tool is developed or one is found that can be modified, validity and reliability would have to be established.

Tool development should also include an examination of the construct adaptation. The findings from this investigation revealed that the waiting period had very little or no effect on the predetermined aspects of the patient's quality of life. This issue, however, needs further exploration and clarification and it is suggested that further study allow subjects' to qualify and then quantify their quality of life during an indeterminate waiting period for CABG surgery.

Once more data has been accumulated on the patient within an indeterminate waiting period for CABG surgery some comparison studies should be conducted. The following four study populations are suggested for this purpose: (1) patients with valvular heart disease; (2) patients requiring repeat CABG surgery; (3) patients requiring urgent and/or emergent CABG surgery; and (4) spouses and/or family members of CABG surgery patient.

If future research is designed around these recommendations the knowledge base of this phenomenon and its effects on the lives of the patient and family will be extended. Such scientific efforts will be the key to supporting or refuting the underlying assumption that waiting an indeterminate period of time for CABG surgery is a stimulus-stressor that is appraised as both a threat and a challenge, that is managed through the use of unique coping strategies, and whose impact is felt, at least to some extent, on all aspects of the individual's life.

Summary

A profile of patient characteristics has emerged for the personal factors, the situational factors, and the process of cognitive appraisal associated with the indeterminate waiting period. The data revealed that threat appraisal was the overwhelming perception of this time frame. A few subjects, however, were also able to see the waiting period as an opportunity or challenge. Subjects used diverse methods to manage the waiting period from a repertoire of problem-focused and emotion-focused coping strategies. It was interesting to find that subjects used predominately problem-focused coping strategies to deal with the stimulus-stressor and, yet, they suggested that other waiting patients should use emotion-focused coping strategies. On each of the five

impact questions, between 35 and 50% of the subjects indicated that their quality of life was effected, at least to some extent. That the waiting period was not rated as having a greater impact was surprising and appears to be incongruent with the rest of the data. These findings have been discussed and supported by the theoretical and cardiac surgery literature. The study's limitations have also been presented along with several implications for nursing practice and recommendations for further research.

This research has established a data base and presented empirical evidence that the indeterminate waiting period for CABG surgery is an important and unique component of the patient's surgical experience. Waiting CABG surgery patient's and their families, however, need information and support during this indeterminate and uncertain time. This is particularly important because the waiting period has become part of the Canadian health care system and it is a phenomenon is not expected to improve or disappear in the near future.

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Appendix A
Cover Letter

GENERAL HOSPITAL
820 Sherbrook Street
Winnipeg, Manitoba R3A 1R9
Dial Direct (204) -

Dr. H. W. Unruh
Acting Section Head
Cardiovascular and Thoracic Surgery

April 29, 1991

Dear Former Patient:

I wish to inform you of the contents of this envelop. I have received a request from Jocelyn Reimer-Kent R.N., a graduate nursing student at the University of Manitoba, to conduct a survey of patients who had heart bypass surgery during 1990. This is an independent study that is not connected with the Health Sciences Centre. She is studying what happens to patients during the waiting period before their operation. She is also interested in learning about how patients felt about waiting for their operation, as well as their unique characteristics.

I am writing to obtain your permission to give Jocelyn Reimer-Kent your name as a possible participant in this study. If you have any objections to this request please let me know by calling the office of Thoracic and Cardiac Surgery, collect at ~~xxxxxxx~~. If you do not call by May 13th I shall assume it is acceptable to give Jocelyn your name, address, and telephone number. Jocelyn will call only those patients who do not object to this request to see if they are interested in participating in the study and to arrange a suitable time for a telephone interview.

Should you decide to participate, no information about you will be shared with health professionals caring for you. All information will be strictly confidential. Whether or not you agree to be part of the study neither your current nor future medical or nursing care will not be affected in any way.

Thank you for considering this request. If you have questions about this study you can reach Jocelyn collect at ~~xxx-7xxx~~ or Annette Gupton R.N., her thesis advisor at ~~xxx-xx xx~~

Yours truly

Dr. H. W. Unruh



Appendix B

Letter of Invitation and Explanation

Dear Patient:

Hello, my name is Jocelyn Reimer-Kent, R. N. I am a graduate student in nursing at the University of Manitoba. I am writing to invite you to participate in a research study that I am conducting as part of my thesis. This is an independent project that is not connected with the Health Sciences Centre. However, the office of Thoracic and Cardiac Surgery at the Health Sciences Centre has sent you this letter, on my behalf so that you can decide whether or not you would like your name, address, and telephone number released to me. My study will look at how patients felt about waiting for their operation as well as their unique characteristics. A study such as this will help nurses and other health-care professionals better understand the effects of the waiting period on the life of the patient.

I would like to contact you, by telephone, to set up a convenient time for a telephone interview. However, your name, address, and telephone number will not be released to me if you have indicated so by calling the office of Thoracic and Cardiac Surgery. Before beginning the telephone interview you will have an opportunity to ask me any questions or voice any concerns that you might have in relation to this project. Once all your questions have been answered to your satisfaction you will be asked to verbally consent to (1) participate in the interview and (2) allow me to look at your medical file. After you have consented, I will ask you to respond to a list of questions. All of the questions require a brief response and some questions allow you to say more. Certain questions will ask you for background information, such as your occupation and whether you are married. With your permission I will also collect information from your medical file about your heart condition before you had surgery. This information will help me understand the patients who consent to participate.

There are no right or wrong answers to any of the questions I will ask. To help make this study meaningful it will be necessary for you to answer each

question based on your personal experience. Our conversation will be at no expense to you and it should take about 30 to 40 minutes of your time. Any information that you give to me or that I obtain on you, will be kept in strictest confidence and your name will not be connected in any way to the results from this study. The information that you share with me will be used for this study only and possible publication of the results. At the end of our conversation you will be asked if you would like me to mail you a summary of the results.

It is important that you understand that you by no means are obligated to participate in this study. If you decide that you would like to contribute to this project, you can withdraw at any time. Whether you agree to participate in this study or not, neither your current nor further medical or nursing care will be affected in any way. There is no anticipated benefit to you if you do choose to participate, however, you will be left with the knowledge that by sharing your experience with me, other patients who are currently waiting for this operation may in some way be benefited.

If you have any questions about this study, I would be happy to hear from you. You may call me collect at (204) 261-6470 or you may contact the Chair of my thesis committee, Annette Gupton R.N. at (204) 474-8937.

Sincerely,

Jocelyn Reimer-Kent R. N.

Appendix C

Telephone Protocol and Consent

Hello, my name is Jocelyn Reimer-Kent. I am a graduate student from the University of Manitoba School of Nursing. Thank you for allowing me to contact you about the study I am conducting about the waiting period for heart bypass surgery.

- * Is this a convenient time for you to talk to me about this project? If no, arrange for a mutually convenient time. If yes, proceed with the following:
- * Do you have any questions about the information you received on my behalf, concerning this project? Answer any and all questions. Then proceed:
- * You understand that you are by no means obligated to participate in this study. If you decide that you would like to contribute to this project, you can withdraw at any time. Whether you agree to participate or not, neither your medical care nor nursing care will be affected in any way. There are no anticipated benefits to you if you choose to participate. You understand that any information you give to me during the telephone interview or that I get from your medical file will be kept in strictest confidence and that by answering my questions and telling me that I can look at your medical file will be considered consenting to be included in this study. Do you understand? No (clarify), Yes (proceed)

CONSENT 1

* Are you interested in participating in the telephone interview? Yes (A), No (B)

(A) Arrange a mutually, suitable interview time and then conduct the interview at that time, following PART 1 of the IWPS.

(B) Thank you for your attention and time, if you would like to participate in the interview at a later time you may contact me free of charge at (204) 261-6470.

CONSENT 2

* Would you allow me to look at your medical file to get information about your heart condition before your operation? Yes (C) No (D).

(C) Obtain medical file from the office of Thoracic and Cardiac Surgery and collect only the variables specified in PART 2 of the IWPS.

(D) Thank you for your attention and time, if you would like to be included in this part of the study at a later time you may contact me free of charge at (204) 261-6470.

Appendix D

Data Collection Instrument

INDETERMINATE WAITING PERIOD SURVEY (IWPS)

ID# _____ Month _____ Day _____

Interview Time (start) _____ (finish) _____

PART 1: SEMI-STRUCTURED INTERVIEW GUIDE

Uncertainty: Waiting Period Events/Characteristics

1. Perceived waiting time

a) To the best of your memory on what date was your first appointment with the heart surgeon?

b) On what date did you have your heart bypass surgery?

For the purposes of this study, the time between your visit to the heart surgeon and actually having your surgery will be considered the waiting period. Please keep this in mind as you briefly answer the following questions.

2. Expected waiting time

After you were told that heart bypass surgery was required, how long did you expect to wait for your operation?

3. Number of hospital admissions and reasons (other than CABG surgery)

a) How many times were you admitted to a hospital during the waiting period?

b) For what reason(s) were you admitted?

4. Number of admission cancellations

How many times were you called, at home, to come to the hospital for your operation and then have these plans cancelled before you were ever admitted?

5. Number of surgical postponements

How many times, after you were admitted to the hospital, was your surgery delayed or the date changed?

6. Number of surgical cancellations

How many times, after you were admitted to the hospital, were you sent home without having your surgery?

Extraneous Processes: Demographic/Biophysical Characteristics

7. Symptom duration

How long, before your surgery do you recall having chest pains or heart problems?

8. Occupation

What is your occupation?

9. Waiting period employment status

a) Were you able to work outside the home during the waiting period?

b) What was your employment status?

c) If you were not able to work during the waiting period, what was the reason(s)?

10. Unemployment Benefits

If you were not able to work during the waiting period, were you receiving sick benefits or unemployment insurance or a disability pension?

11. Current Employment Status

a) Are you currently working outside the home?

b) What is your current employment status?

c) If you have not returned to work since your surgery, what is the reason(s)?

12. Marital Status

What was your marital status during the waiting period?

THE PROCESS OF COGNITIVE APPRAISAL

Primary Appraisal/Stress

13. Waiting period difficulties/benefits

a) What would you say was the biggest difficulty or problem you experienced during the waiting period?

b) Were there any other difficulties or problems that you recall?

c) What would you say was the biggest benefit or a good thing you experienced during the waiting period?

d) Were there any other benefits or good things that you recall?

Secondary Appraisal/Coping

14. Waiting period coping strategies

- a) What do you think was the best thing that you did that helped you deal with the waiting period?

- b) Were there any other helpful things that you recall?

Reappraisal/Reevaluation

15. Waiting period suggestions/advice

- a) What is the most important piece of advice or suggestion would you give to another patient who is now waiting for heart bypass surgery?

- b) Is there anything else you would like to tell them?

Adaptation/Outcome

16. Waiting period impact

Intensity Scale:

1	2	3	4	5
Not	Very	Some	Fair	Great
at all	little	what	amount	deal

a) To what degree do you think the waiting period effected your health?

1 2 3 4 5

b) To what degree do you think the waiting period effected your family life?

1 2 3 4 5

c) To what degree do you think the waiting period effected your daily routines or home responsibilities?

1 2 3 4 5

d) To what degree do you think the waiting period effected your social life?

1 2 3 4 5

e) To what degree do you think the waiting period effected your leisure, recreation, or hobby life?

1 2 3 4 5

17. Questionnaire evaluation

a) Do you feel the questions adequately covered your experiences during the waiting period?

b) If no, what things were missing?

PART 2: MEDICAL RECORD AUDIT

Extraneous Processes: Demographic/Biophysical Characteristics

1. Age (years) _____
2. Gender _____
3. Angina severity _____
4. Number of significantly diseased coronary arteries _____
5. Significant left main coronary artery disease _____
6. Previous MI _____
7. Left ventricular ejection fraction _____

Uncertainty: Waiting Period Events/Characteristics

8. Actual waiting time _____
Date of surgical consult
___ / ___ / ___ /
D M Y
Date of surgery
___ / ___ / ___ /
D M Y
9. Number of cardiac catheterizations during the waiting period _____

Appendix E

IWPS Instrument Coding Sheet

INDETERMINATE WAITING PERIOD SURVEY (IWPS)
CODING SHEET

ID# _____ (1 - 2) Month _____ (3) Day _____ (4 - 5)

Interview Time (minutes) _____ (6 - 7)

PART 1: SEMI-STRUCTURED INTERVIEW GUIDE

Uncertainty: Waiting Period Events/Characteristics

1. Perceived waiting time (8)

- | | | |
|-------------------|-----------------|------------------|
| 1. 0 - 40 days | 2. 41 - 82 days | 3. 83 - 166 days |
| 4. 167 - 365 days | 5. > 365 days | |

2. Expected waiting time (9)

- | | | |
|-----------------------|-------------------|-----------------|
| 0. Couldn't speculate | 1. 0 - 40 days | 2. 41 - 82 days |
| 3. 83 - 166 days | 4. 167 - 365 days | 5. > 365 days |

3. a) Number of hospital admission(s) (10)

- | | | | |
|---------|--------|--------|----------|
| 0. None | 1. One | 2. Two | 3. > Two |
|---------|--------|--------|----------|

b) Reason(s) for hospital admission(s) (11)

THESE CATEGORIES HAVE BEEN DERIVED FROM CONTENT ANALYSIS

- | | | |
|----------------------|-------------|---------|
| 1. Chest pain/angina | 2. Cold/flu | 3. Both |
|----------------------|-------------|---------|

4. Number of admission cancellations (12)

- | | | | |
|---------|--------|--------|----------|
| 0. None | 1. One | 2. Two | 3. > Two |
|---------|--------|--------|----------|

5. Number of surgical postponements (13)
0. None 1. One 2. Two 3. > Two
6. Number of surgical cancellations (14)
0. None 1. One 2. Two 3. > Two

Extraneous Processes: Demographic/Biophysical Characteristics

7. Symptom duration (15)
1. ≤ 52 weeks 2. > 52 weeks
8. Occupation (16)
1. Unskilled 2. Skilled/Farmer/Homemaker
3. Executive/Professional
9. a & b) Waiting period employment status (17)
1. Full-time 2. Part-time 3. Unemployed 4. Retired

c) Reason(s) for waiting period unemployment (18)

THESE CATEGORIES HAVE BEEN DERIVED FROM CONTENT ANALYSIS

- | | |
|------------------------------|----------------------|
| 0. None | 1. Cardiac |
| 2. Noncardiac health-related | 3. Nonhealth-related |
| 4. Physician advice | 5. 1 & 2 |
| 6. 1 & 3 | 7. 1 & 4 |

10. Unemployment Benefits (19)
1. Yes 2. No
11. a & b) Current employment status (20)
1. Full-time 2. Part-time 3. Unemployed 4. Retired

c) Reason for current unemployment (21)

THESE CATEGORIES HAVE BEEN DERIVED FROM CONTENT ANALYSIS

- | | |
|----------------------|------------------------------|
| 0. None | 1. Cardiac |
| 2. Noncardiac | 3. Noncardiac health-related |
| 4. Nonhealth-related | 5. Physician advice |
| 5. 1 & 3 | 6. 1 & 4 |
| 7. 1 & 5 | 8. 2 & 4 |
| 9. 2 & 5 | |

12. Marital status (22)

- | | |
|-------------------|----------------------|
| 1. With a partner | 2. Without a partner |
|-------------------|----------------------|

THE PROCESS OF COGNITIVE APPRAISAL

Primary Appraisal/Stress

13. a) Greatest waiting period difficulty (23 - 24)

THESE CATEGORIES HAVE BEEN DERIVED FROM CONTENT ANALYSIS

01. Fear of MI/CVA/death
02. Recurrent symptoms
03. Putting life on hold
04. Lack of information
05. Fear of missing the call
06. Fear of or actually being cancelled
07. Taking medications
08. Lack of control
09. Fear of actual surgery
10. Nothing

13. b) Other waiting period difficulties

THESE CATEGORIES HAVE BEEN DERIVED FROM CONTENT ANALYSIS

1. Fear of MI/death (25)

1. Yes 2. No

2. Recurrent symptoms (26)

1. Yes 2. No

3. Putting life on hold (27)

1. Yes 2. No

4. Lack of information (28)

1. Yes 2. No

5. Fear of missing the call (29)

1. Yes 2. No

6. Impact on the spouse/family (30)

1. Yes 2. No

7. Being in limbo/isolated/confined (31)

1. Yes 2. No

8. Lack of personal control (32)

1. Yes 2. No

9. Financial difficulties (33)

1. Yes 2. No

10. Fear of actual surgery (34)

1. Yes 2. No

11. Fear of or actually being cancelled (35)

1. Yes 2. No

12. Nothing (36)

1. Yes 2. No

Total number of waiting period difficulties (37)

0. Zero 1. One 2. Two 3. Three
4. Four 5. Five 6. Six 7. Seven

13.c) Greatest waiting period benefit (38)

THESE CATEGORIES HAVE BEEN DERIVED FROM CONTENT ANALYSIS

1. Talking to other CABG surgery patients
2. Not having to face imminent surgery
3. Making lifestyle changes
4. Getting comfort/ support from spouse/family/others
5. Putting life/personal affairs in order/finishing projects
6. Nothing

13.d) Other waiting period benefits

THESE CATEGORIES HAVE BEEN DERIVED FROM CONTENT ANALYSIS

1. Talking to other CABG surgery patients (39)
 1. Yes
 2. No
2. Getting comfort and support from spouse/family/others (40)
 1. Yes
 2. No
3. Putting life/personal affairs in order/finishing projects (41)
 1. Yes
 2. No
4. Thinking things through (42)
 1. Yes
 2. No
5. Taking away the fear of having surgery (43)
 1. Yes
 2. No
6. Nothing (44)
 1. Yes
 2. No

Total number of waiting period benefits (45)

- | | | |
|----------|---------|---------|
| 0. Zero | 1. One | 2. Two |
| 3. Three | 4. Four | 5. Five |

Secondary Appraisal/Coping

14.a) Best waiting period coping strategy (46 - 47)

THESE CATEGORIES HAVE BEEN DERIVED FROM CONTENT ANALYSIS

01. Viewed the problem objectively

02. Talked with other CABG surgery patients
03. Kept active
04. Watched for symptoms
05. Continued to live a normal life
06. Acceptance/Took things in stride
07. Made lifestyle changes
08. Called the surgeon's office to inquire about the waiting list
09. Stayed by the telephone
10. Got comfort/support from family/others
11. Had religious faith and prayed
12. Thought positively
13. Had faith/trust in the medical profession
14. Tried not to worry
15. Hoped it would happen soon
16. Didn't think about it

Best waiting period coping mode (48)

1. Problem-focused (1 - 9)
2. Emotion-focused (10 - 16)

14.b) Other waiting period coping strategies

THESE CATEGORIES HAVE BEEN DERIVED FROM CONTENT ANALYSIS

1. Viewed the problem objectively (49)
 1. Yes
 2. No
2. Talked with other CABG surgery patients (50)
 1. Yes
 2. No
3. Kept active (51)
 1. Yes
 2. No
4. Watched for symptoms (52)
 1. Yes
 2. No
5. Continued to live a normal life (53)
 1. Yes
 2. No

6. Acceptance/Took things in stride (54)
 1. Yes
 2. No
7. Made lifestyle changes (55)
 1. Yes
 2. No
8. Called the surgeon's office to inquire about the waiting list (56)
 1. Yes
 2. No
9. Stayed by the phone (57)
 1. Yes
 2. No
10. Packed a suitcase to be ready when the hospital called (58)
 1. Yes
 2. No
11. Inquired about the surgeon's reputation (59)
 1. Yes
 2. No
12. Prepared a will (60)
 1. Yes
 2. No
13. Controlled symptoms/Took medications (61)
 1. Yes
 2. No
14. Got comfort/support from family/others (62)
 1. Yes
 2. No
15. Had religious faith and prayed (63)
 1. Yes
 2. No
16. Thought positively (64)
 1. Yes
 2. No
17. Had faith/trust in the medical profession (65)
 1. Yes
 - 2.
18. Tried not to worry (66)
 1. Yes
 2. No
19. Hoped it would happen soon (67)
 1. Yes
 2. No
20. Didn't think about it (68)
 1. Yes
 2. No
21. Meditated/searched for inner strength (69)
 1. Yes
 2. No

22. Listened to music/watched TV (70)

1. Yes 2. No

23. Hoped for the best (71)

1. Yes 2. No

24. Tried to relax (72)

1. Yes 2. No

25. Wished the call would come (73)

1. Yes 2. No

26. Nothing (74)

1. Yes 2. No

Other waiting period coping mode (75)

0. None 1. Problem-focused (1 - 13)
2. Emotion-focused (14 - 25) 3. Both

Total number of waiting period coping strategies (76)

0. Zero 1. One 2. Two 3. Three 4. Four
5. Five 6. Six 7. Seven

Reappraisal/Reevaluation

15.a) Best suggestion/advice (77 - 78)

THESE CATEGORIES HAVE BEEN DERIVED FROM CONTENT ANALYSIS

- 01. Keep active
- 02. Acceptance/Take things in stride
- 03. Continue to live a normal life
- 04. Make lifestyle changes
- 05. Call the surgeon's office to inquire about the waiting list
- 06. Don't worry
- 07. Try to relax
- 08. Think positively
- 09. Get comfort/support from family/others

- 10. Have faith/trust in the medical profession
- 11. Hope the wait will soon be over
- 12. Just keep waiting
- 13. Don't think about it

Best suggested coping mode (79)

- 1. Problem-focused (1 - 5)
- 2. Emotion-focused (6 - 13)

15.b) Other suggestions/advice

THESE CATEGORIES HAVE BEEN DERIVED FROM CONTENT ANALYSIS

- 1. View the problem objectively (80)
 - 1. Yes
 - 2. No
- 2. Keep active (81)
 - 1. Yes
 - 2. No
- 3. Continue to live a normal life (82)
 - 1. Yes
 - 2. No
- 4. Make lifestyle changes (83)
 - 1. Yes
 - 2. No
- 5. Talk to other CABG surgery patients (84)
 - 1. Yes
 - 2. No
- 6. Get more information about the surgery (85)
 - 1. Yes
 - 2. No
- 7. Don't worry (86)
 - 1. Yes
 - 2. No
- 8. Try to relax (87)
 - 1. Yes
 - 2. No
- 9. Think positively (88)
 - 1. Yes
 - 2. No
- 10. Get comfort/support from family/others (89)
 - 1. Yes
 - 2. No
- 11. Have faith/trust in the medical profession (90)
 - 1. Yes
 - 2. No

d) Social life impacted (100)

- | | | |
|----------------|----------------|-------------|
| 1. Not at all | 2. Very little | 3. Somewhat |
| 4. Fair amount | 5. Great deal | |

e) Leisure/recreation/hobby life impacted (101)

- | | | |
|----------------|----------------|-------------|
| 1. Not at all | 2. Very little | 3. Somewhat |
| 4. Fair amount | 5. Great deal | |

17. All important aspects of the waiting period were covered (102)

- | | |
|--------|-------|
| 1. Yes | 2. No |
|--------|-------|

PART 2: MEDICAL RECORD AUDIT

Extraneous Processes: Demographic/Biophysical Characteristics

1. a) Age (in years) _____ (103 - 104)

b) Age category (105)

- | | |
|---------|---------|
| 1. > 65 | 2. ≤ 65 |
|---------|---------|

2. Gender (106)

- | | |
|-----------|---------|
| 1. Female | 2. Male |
|-----------|---------|

3. Angina severity (107)

- | | |
|-------------------|------------------|
| 1. NYHA Class I | 2. NYHA Class II |
| 3. NYHA Class III | 4. NYHA Class IV |

4. Number of significantly diseased coronary artery(s) (108)

- | | | | |
|--------|--------|----------|------------|
| 1. One | 2. Two | 3. Three | 4. > Three |
|--------|--------|----------|------------|

5. Significant left main coronary artery disease (109)

- | | |
|--------|-------|
| 1. Yes | 2. No |
|--------|-------|

