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HEALTH PERCEPTION, ANGINAL SYMPTOMS AND LIFE SATISFACTION AFTER CORONARY ARTERY BYPASS AND PERCUTANEOUS TRANSLUMINAL CORONARY ANGIOPLASTY

Diana Creger Porter

School of Nursing
Virginia Commonwealth University

This is to certify that the thesis prepared by Diana Creger Porter entitled Health Perception, Anginal Symptoms and Life Satisfaction After Coronary Artery Bypass and Percutaneous Transluminal Coronary Angioplasty has been approved by her committee as satisfactory completion for the thesis requirement for the degree of Master of Science.

[redacted]

Director of Thesis

[redacted]

Committee Member

[redacted]

Committee Member

[redacted]

School Director of Graduate Study

[redacted]

Department Chairman

[redacted]

School Dean

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HEALTH PERCEPTION, ANGINAL SYMPTOMS AND LIFE SATISFACTION AFTER CORONARY ARTERY BYPASS AND PERCUTANEOUS TRANSLUMINAL CORONARY ANGIOPLASTY

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science at Virginia Commonwealth University

By

Diana Creger Porter
B.S., James Madison University, 1978
B.S., Nursing, Virginia Commonwealth University, 1981

Director: Linda Lange, R.N., Ed.D.
Assistant Professor
Director, Computer Services in Nursing Education

Virginia Commonwealth University
Richmond, Virginia
December, 1986

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ABSTRACT

HEALTH PERCEPTION, ANGINAL SYMPTOMS AND LIFE SATISFACTION AFTER CORONARY ARTERY BYPASS AND PERCUTANEOUS TRANSLUMINAL CORONARY ANGIOPLASTY

Diana Creger Porter, B.S.N., R.N.

Medical College of Virginia-Virginia Commonwealth University, 1986

Major Director: Linda Lange, R.N., Ed.D.

The purpose of this descriptive correlational study was to gather data about the perceived health, anginal symptoms and life satisfaction in CABG and PTCA patients. The study explored the interrelationships among the variables and the differences between the two groups. The problem statement was:

1. How do patients perceive their own past, present and future health, level of anginal symptoms and life satisfaction after CABG and PTCA?

2. What are the interrelationships among perceived health, anginal symptoms and life satisfaction in CABG and PTCA patients.

The conceptual framework for this study was based on the social theory of symbolic interactionism and the nursing model of man-living-health (Parse, 1981). Perceived past, present and future health, anginal symptoms and life

satisfaction were measured by the subject's self placement along 100 millimeter analog scales. Data were obtained in a 30 minute interview with each subject at the time of the patient's first follow-up visit to the physician's office four to eight weeks post procedure. Twenty-two percent of the patients (eight patients) who were eligible for inclusion were included in the study.

The means of the scores for perceived health, anginal symptoms and life satisfaction were calculated. The Kruskal-Wallis one-way analysis of variance statistic was used to detect statistically significant differences between the two groups of subjects, and graphs were constructed to illustrate the relationships among the variables. Demographic data were subjected to descriptive analysis by group.

The mean scores for the PTCA group were low for the past, only slightly higher for the present, and much higher for the future for all three variables. The mean scores for the CABG group were low for the past and much higher for the present for all three variables. The mean scores for the future were higher for anginal symptoms, but lower for health and life satisfaction for the CABG group. A significant difference was found between the two groups for perceived present health, anginal symptoms and life satisfaction. The mean scores for perceived health, anginal symptoms and life satisfaction assumed a similar curve on a

line graph for each group, suggesting a correlation between the variables within the group.

Implications for nursing practice apply at primary and secondary levels of prevention. On the primary level, information obtained in descriptive research aimed at identifying commonly occurring perceptions in the CABG and PTCA patient would allow the nurse to begin intervention in the pre-procedure period by clarifying misconceptions and initiating accurate pre-procedure instruction. On the secondary level of prevention, the nurse can begin clarifying these commonly occurring misconceptions early in the recovery period in an attempt to encourage health-promoting behavior choices based on realistic expectations by the patient. Implications for nursing research and education were related to the addition of new information regarding the perceptions of the CABG and PTCA patient.

CHAPTER ONE

Introduction

Coronary artery disease is the leading cause of death in the United States today. It accounts for 30 percent of the total mortality (National Heart, Lung and Blood Institute, 1982). It is estimated that 1.25 million Americans suffer myocardial infarctions each year. Of these, 600,000 will result in premature death (Andreoli, Fowlkes, Zipes and Wallace, 1979), and more than half of the survivors will suffer from some form of physiological, psychological or social disability (Ott, Sivarajan, Newton, Almes, Bruce, Bergner and Gilson, 1983).

In 1977, coronary artery disease (CAD) accounted for $5.5 billion in direct medical costs (hospitalizations, physician fees), $2.3 billion in indirect medical costs (loss of productivity, disability income) and $17.8 billion in premature deaths (Wenger, 1984). Included in this annual cost are 61 million out-of-hospital days in bed, 81 million days of lost work and 18.4 billion days of restricted activity (Wenger, 1984). CAD ranks second only to arthritis in terms of losses due to physical limitations and the effects of chronic illness.

Coronary artery disease has been called the "Disease of the Twentieth Century." Although mortality from CAD has been steadily declining since the mid-1960's, CAD is still the number one cause of death in the country. With the advent of coronary care units, more patients are surviving the acute phase of myocardial infarction to be discharged to the community. Thus, the morbidity associated with CAD is prevalent. It is estimated that 25-50 percent of survivors fail to return to the workplace (Ott, et al., 1983).

Coronary artery bypass graft surgery (CABG or CVG) has been widely available since the early 1960's. The early studies on the results of CABG surgery focused on mortality and relief of symptoms in comparison with medical treatment (Alderman, Matlof, Wexler, Shumway and Harrison, 1973; Cooley, Wukash, Bruno, Reul, Sandiford, Zillgitt and Hall, 1978; Mathur, Guinn, Anastassiades, Chahine, Korompai, Montero and Luchi, 1975). Despite this documentation of improvement of symptoms compared with medical treatment, surgery does not appear to prolong life in all patients (Hamilton, Hammermeister, DeRouen, Zia and Dodge, 1983). Because these studies do not conclusively justify CABG surgery in terms of prolongation of life and preservation of the work force (Russell, Wayne, Kronenfeld, Charles, Kouchoukos, White, Rogers, Mantle and Rackley, 1980; Gutmann, Knapp, Pollock, Schmidt, Simon and Walcott, 1982), attention has

been turned to other issues such as quality of life after CABG surgery.

Percutaneous transluminal coronary angioplasty (PTCA) has been available since 1979. It is a technique by which a balloon-tipped catheter is inserted through a femoral artery and threaded into the stenosed coronary artery. The balloon tip is then inflated, thereby pressing the plaque against the vessel wall and increasing the diameter of the vessel lumen. Successful PTCA is determined by a decrease in the pressure gradient across the stenosis (Block, 1985). As with the early studies on the results of CABG surgery, attention has been focused on the success of the procedure (Grüntzig, Senning and Siegenthaler, 1979; Kent, Bentivoglio, Block, Cowley, Dorros, Gosselin, Grüntzig, Myler, Simpson, Stertzer, Williams, Fisher, Gillespie, Detre, Kelsey, Mullin and Mock, 1982), the improvement of symptoms (Kent, et al., 1982) and the return to work (Jang, Block, Cowley, Grüntzig, Dorros, Holmes, Kent, Leatherman, Myler, Stertzer, Sjolander, Willis, Vetrovec and Williams, 1982). There is a need for follow-up studies of patients undergoing PTCA compared with CABG surgical patients in terms of quality of life.

This study examined the health perceptions, anginal symptoms and life satisfaction of the CABG and PTCA patient. Nursing has long been concerned with the patient's acceptance, recovery and integration of the illness

experience. The aim of nursing is to encourage return to the highest level of functioning possible with the concomitant growth of the individual. An early and complete acceptance, recovery and integration of the CABG surgery or PTCA experience and subsequent return to a high level of functioning (i.e., independence, return to work) would decrease human suffering and dollars spent in disability payments, rehospitalizations and extended outpatient care.

Problem Statement

1. How do patients perceive their own past, present and future health and life satisfaction after CAGB and PTCA?

2. How do patients perceive their past, present and future level of anginal symptoms after CABG and PTCA?

3. What are the interrelationships among health perception, anginal symptoms and life satisfaction in the CABG surgery and PTCA patient?

4. What are the differences between CABG and PTCA patients in their perceptions of health, life satisfaction and angina?

Definition of Terms

Health perceptions. Conceptual: the subject's perceived health status for the past (two weeks before CABG or PTCA), present (four to eight weeks after CABG or PTCA) and future (12 months after CABG or PTCA). Operational: measured by the distance in millimeters between the endpoint and a mark

placed by the subject on a 100 mm. analog scale whose endpoints are labeled the worst possible health/the best possible health.

Perceived life satisfaction. Conceptual: the subject's perception of the fulfillment of his desires, needs and goals for the past, present and future (same time periods as above). Operational: measured by the distance in millimeters between the endpoint and a mark placed by the subject on a 100 mm. analog scale whose endpoints are labeled the worst possible life/the best possible life.

Perceived level of anginal discomfort. Conceptual: the subject's perceived severity and frequency of anginal symptoms for the past, present and future (same time periods as above). Operational: measured by the distance in millimeters between the endpoint and a mark placed by the subject on a 100 mm. vertical analog scale whose endpoints are labeled the most comfortable angina/no angina.

Coronary artery bypass graft patient. An individual with CAD who was treated by coronary bypass grafting, who returned to the office for the first follow-up visit six weeks post procedure, and who agreed to participate in the study.

Percutaneous transluminal coronary angioplasty patient. An individual with CAD who was treated by percutaneous transluminal angioplasty, who returned to the office for the first

follow-up visit six weeks post procedure, and who agreed to participate in the study.

Assumptions

1. Health perception is a distinct subjective response to illness or the threat of illness and is amenable to measurement.

2. Life satisfaction and angina are quantitative as well as qualitative entities and can be measured.

3. CABG and PTCA patients will have concrete ideas regarding their perceived level of health and life satisfaction at six weeks after the procedure.

Limitations

1. CABG surgery and PTCA patients may not have had enough time at six weeks after the event to incorporate the illness experience into their self concept.

2. It is possible that variables other than health perception and anginal symptoms could influence a patient's perception of life satisfaction.

3. A sample of convenience was used, hence limiting the ability to generalize findings to another population.

4. The time frame of data collection was three weeks, possibly limiting the sample size.

Delimitations

1. The sample was taken from one private cardiology practice which limited the potential for widely varying methods of treatment by different physicians.

2. The sample consisted of those CABG surgery and PTCA patients who have no history of pre-existing debilitating or chronic physical or mental illnesses.

Conceptual Framework

Symbolic Interactionism and Definition of the Situation

Symbolic interactionism is a term applied to a specific approach to the study of society and human behavior. This approach is based on three major premises. The first premise is that human beings act toward things on the basis of the meanings those things have for them. For example, these things can be physical objects such as chairs or books, other human beings such as nurses, institutions such as hospitals or states such as illness and health (Blumer, 1969).

The second premise is that the meaning of such things arises out of the interaction one has with other human beings. The meaning of the thing is derived from the way other persons behave toward the person with regard to the thing. The thing is in part defined for a person by others' actions (Blumer, 1969).

The third premise is that these meanings are incorporated into and changed through an interpretative process used by the person in dealing with the things with which he comes in contact. The process of interpretation occurs when the person indicates to himself the things to which he is acting and "selects, checks, suspends, regroups and transforms the meanings in the light of the situation in which he is placed and the direction of his actions" (Blumer, 1969).

These premises support a major concept upon which this paper is based: the definition of the situation. A situation is a particular event, activity or social context bounded by space and time which also possesses meaning for the individual. It is the meaningful intersection of space and time. It should be remembered that the present is understood in relation to past experiences and future expectations. Through their memory of past experiences and their expectations of the future, humans develop a sense of the structure of a situation and the roles created and assumed in the situation.

CABG and PTCA patients may have relatives or friends who have had myocardial infarctions and (1) died, (2) become cardiac invalids, (3) experienced no life style alterations or physical limitations, or (4) recovered and altered behaviors to become healthier and more active than pre-infarct. The CABG and PTCA patient may expect to

experience any of the above. How the patient deals with the acceptance, recovery and integration of the illness experience will be dependent upon the meaning the illness has for him, his past experience with the illness and his expectations of what the illness will mean to him.

Nursing Theory

The conceptual framework for this study is also derived from the nursing model developed by Rosemary Parse. Parse's work draws from several of the concepts of symbolic interactionism. Parse views nursing as an art and a science whose foundations lie within the human sciences, rather than the natural sciences. The focus of Parse's model is unitary man, who is defined as "one who coparticipates with the environment in creating and becoming, and who is whole, open, and free to choose ways of living health" (Parse, 1981:7). This definition is derived from two existential-phenomenological principles, intentionality and human subjectivity. Health is a process of becoming. The person's "self project" of becoming emerges from "...connections with predecessors and contemporaries in creating the who one is at a given moment... and ...the immediate situation in which man finds self" (Parse, 1981:19). Human subjectivity presumes that man is "...a unity of the subject-world relationship" (Parse, 1981:19). By nature, man "...participates with the world in cocreation of self" (Parse, 1981:19).

The existential-phenomenological tenets of intentionality and human subjectivity give rise to the concepts of coconstitution, coexistence and situated freedom. Coconstitution refers to the particular constituents (e.g., health perception, anginal symptoms and life satisfaction) of a situation such as illness, which generate the meaning of that situation. Coexistence is the idea of the person as an emerging being who knows self through the perceptions of others and the comprehension of concrete achievements (Parse, 1981:20). Situated freedom refers to the individual's ability to participate in choosing the situations in which he/she finds himself/herself and his/her attitudes to these situations (Parse, 1981).

Parse defines health as a process, not a state. It is "...an open process of becoming experienced by man" (Parse, 1981:30). She feels that perception of health is unique to the individual and that it is being cocreated momentarily through the person's relationships with others.

Parse describes nursing activity as "...guiding the person and family in choosing among possibilities in the changing health process" (Parse, 1981:14). The person's valuing and perception of health are the targets of nursing intervention. Communication is seen as the primary nursing action. As a clinical example, the cardiac patient experiences major psychological and emotional needs during

hospitalization and after discharge. The professional nurse is instrumental in assisting the patient to accept and to understand the illness and channel personal energies into productive directions for recovery. The professional nurse is in the position to elicit and clarify any misconceptions the patient may have about the illness.

In summary, the conceptual framework on which this study is based includes theories from sociology and nursing science. In this study, man's perceptions of health, life satisfaction and anginal symptoms are viewed as meanings attributed to the illness experience. These meanings are derived from interactions with others regarding health and illness, personal interpretative processes, memories of past experiences and expectations of future experiences.

The goal of nursing is to help the patient to identify the choices or possibilities of living which would facilitate health. Nursing intervention should be aimed at identifying and correcting inaccurate perceptions which may lead to destructive health behaviors and the patient's inability to accept, integrate and recover from the illness experience. Nursing research that attempts to identify commonly occurring attitudes and perceptions in the CABG and PTCA patient would offer direction for nursing intervention as well as contribute to descriptive and predictive theory development.

CHAPTER TWO

Literature Review

Introduction

Happiness, or satisfaction with life, has been a subject of research for psychologists and sociologists for decades. Many terms have been used to describe satisfaction with life. The terms commonly used by the authors of the studies reviewed here are happiness, quality of life, subjective well-being, contentment and life satisfaction. These terms will be used interchangeably for this study, as it did not seem appropriate to alter the original terminology of the researchers reviewed for the sake of uniformity. This review of literature will present information on the following questions:

1. What are the components of life satisfaction?
2. Of what importance is health to life satisfaction?
3. How do individuals rate their own health?

Life Satisfaction

The early studies of life satisfaction were attempts to determine all the variables that could influence one's happiness or life satisfaction. One of the earliest of these (Watson, 1930) examined the responses of 388 graduate students of education whose ages ranged from 20 to over 60

years (average age = 30). Watson was one of the first investigators to use a horizontal line, the forerunner to later analog scales, as a tool to measure happiness. The extremes of Watson's graphic rating scale were labeled "most miserable" and "happiest of all." The increments between the extremes were marked and labeled. The question accompanying this scale was "Comparing yourself with other persons the same age and sex, how do you feel you should rate your own happiness?" Watson concluded that happiness was associated with high job morale, religion and love (a happy home and relationships with others). Hobby interests and health were found to have little relationship to happiness on the whole. Wealth, education of parents, intelligence, school success, age, family size and mother's career were found to have no relationship to happiness. Watson's study established that the general level of happiness of adults can be measured reliably by a single question and placement of self on a graphic scale.

The first major study of quality of life was carried out in 1957 by Gurin, Veroff and Feld. Americans View Their Mental Health (Gurin, Veroff and Feld, 1960), based on a national survey, measured the mental health of the population. A questionnaire with a strongly psychological focus was administered in addition to one question asking the subject to report how happy he was--very happy, pretty happy or

not too happy. The results of this study indicated that education, income, socioeconomic status and marital status had a positive correlation to overall happiness, that age had a negative correlation to happiness, and that gender made no difference in reports on happiness.

The second major study of life satisfaction (Bradburn and Caplovitz, 1985), supported by the National Institutes of Mental Health, also attempted to describe the psychological well-being of the nation. Samples from four communities in Illinois (each representing a different economic status) were asked the question, "Taking all things together, how would you say things are these days--very happy, pretty happy or not too happy?" The results of this study were similar to those of Gurin, Veroff and Feld (1960) in that the happy individual was found to be young, caucasian and well-educated with frequent social contacts.

Cantril (1965) conducted the third major life satisfaction study, the most ambitious to date. Conducted in 13 countries (including the United States), this study attempted to discover those concerns most important in determining happiness. Cantril chose countries ranging from highly advanced to poor and underdeveloped. Cantril used a tool he developed, the Self-Anchoring Striving Scale. The scale is in the shape of a vertical ladder with zero at the bottom and 10 at the top. The subject was asked to define what he felt

would be the "best possible life" and what would be the "worst possible life." The subject was then asked to place himself at the point where he felt he stood between the two extremes which he had defined. Thus the scale is self-anchoring in that the subject determined the two extremes of measure. Cantril found that for Americans, health, standard of living and family life were rated as the concerns most important to life satisfaction.

In 1967, Wilson collected and summarized data obtained from studies to date (includng his own) and concluded that

> the happy person emerges as a young, healthy, well-educated, well-paid, extroverted, optimistic, worry-free, religious, married person with high self-esteem, high job morale, modest aspirations, of either gender and of a wide range of intelligence (Wilson, 1967).

Some of Wilson's assumptions have been called into question and will be addressed later in this paper.

The 1970's ushered in an era of heightened interest in life satisfaction (or quality of life). With more complex statistical and computational techniques and an expanding geriatric population, greater numbers of social scientists were conducting studies aimed at identifying the correlates of life satisfaction. A new perspective, characteristic of the studies of this decade, was the attempt to measure the relative importance of the correlates of life satisfaction. In studies conducted during this time, emphasis was also placed on nondemographic variables (such as relationships,

health) of life satisfaction.

Bortner and Hultsch examined the relationships of both the demographic and sociopsychological variables they expected to be predictive of life satisfaction. They also attempted, by regression analysis, to determine the combination of variables which is most closely related to life satisfaction. The investigators used a self-anchoring scale similar to Cantril's scale. Subjects were asked the question, "Where would you put yourself on the ladder at the present stage of your life in terms of how satisfied you are with your own life" (Bortner and Hultsch, 1970:43). Results of multiple regression analysis indicated sociopsychological factors such as success in goals and self respect are more predictive of life satisfaction than are demographic variables.

Palmore and Luikart (1972) analyzed health, activity, sociopsychological and socioeconomic variables, using data from the Duke Adaptation Study--a longitudinal study of 50 subjects aged 45-69. Life satisfaction and self-rated health were measured using the Cantril Self-Anchoring Scale. Activity was measured by the sum of the number of club, association or union meetings and religious services subjects reported having attended each month, the number of hours spent per week attending concerts, entertaining, telephoning or writing friends, and the number of hours spent per week doing housework, volunteer work or yardwork (p. 70).

Sociopsychological variables were measured by the Jessor "Internal-External Control of Reinforcement Scale." Self-rated health was found to be the variable most predictive of life satisfaction. The amount of organizational activity and belief in internal control were the second and third most important variables. In contrast to Wilson's conclusions, age, sex, career, marital status, intelligence and total social contacts were found to have little or no relationship to life satisfaction.

Edwards and Klemmack (1973) attempted to determine the extent to which each of 22 variables was predictive of life satisfaction among middle-aged and elderly persons. Life satisfaction was measured by using the Life Satisfaction Index (Neugarten, Havighurst and Tobin, 1961) as modified by Adams (1969). Six major categories of independent variables were measured: socioeconomic status, personal and social background, informal interaction with kin, informal non-familial participation and health status. Of interest regarding the health status category, perception of one's health was positively related to life satisfaction, while the number of ailments experienced recently or in the immediate past was unrelated. Perceived health, informal participation with nonkinsman and socioeconomic status were found to be most predictive of life satisfaction. This finding for socioeconomic status is in direct contrast to those of

Palmore and Luikart (1972), who found socioeconomic status not to be significantly related to life satisfaction. Corroborating these results were several studies conducted later in the decade that also implicated perceived health as predictive of life satisfaction (Spreitzer and Snyder, 1974, 1979; Cutler, 1979; Medley, 1980). In another well-known attempt to assess the interrelatedness of independent variables such as health and life satisfaction, Campbell, Converse and Rogers (1976) found that health, marriage and family life were rated as highly contributory to general well-being.

In the first longitudinal study of life satisfaction, Palmore and Kivett (1979) collected data from 502 adults, aged 46-70, in three rounds of interviews each two years apart. The dependent variable, life satisfaction, was measured by placement on the "Cantril Ladder" (Cantril, 1965). The three significant predictors of life satisfaction in Round 1 interviews were also significant in Round 3. These three variables were: self-rated health, sexual enjoyment and social activity hours. Attempts to predict changes in life satisfaction were unsuccessful.

With the advent of more sophisticated statistical tests and widespread computer use in research, investigators began to study not only the predictive values of the correlates of life satisfaction, but also the indirect effects of independent variables (Markides and Martin, 1979; Toseland and

Rasch, 1980). These studies measured how much influence one variable may have on another variable or set of variables in predicting one's satisfaction with life. Results of both studies implicated self-reported health as being a strong predictor of life satisfaction independently and through other variables.

Most of the literature to date on life satisfaction has been related to "normal populations" or the elderly. Very little research on the determinants of life satisfaction in "non-normal" individuals, specifically the chronically ill, has been conducted.

In an attempt to determine the effects of chronic illness on life satisfaction, Laborde and Powers (1980) conducted a comparison study of two groups of patients. Twenty hemodialysis outpatients and 20 patients with severe osteoarthritis, between the ages of 40 and 60 (inclusive), were questioned regarding where on the Cantril Ladder they would rate their past, present and expectations for future life satisfaction. Data were analyzed by ANOVA which yielded an overall significant difference for the two groups as well as for the time periods. The hemodialysis patients' ratings of life satisfaction were higher than the osteoarthritics' ratings, as were their expectations for greater life satisfaction in the future. Past life satisfaction was the same for both groups. Laborde and Powers concluded that the

increased life satisfaction among dialysis patients may have been influenced by their sense of well-being on the dialysis machine and the presence of chronic pain commonly experienced by osteoarthritics may have decreased their ratings of life satisfaction.

More recently, Laborde and Powers (1985) examined the changes in life satisfaction over time and the relative impact of illness-related and health belief factors on present life satisfaction in osteoarthritics. The sample consisted of 160 osteoarthritics who were asked to rate their life satisfaction (past, present and future) using the Cantril Self-Anchoring Striving Scale. Health orientation was measured by the Health Locus of Control Scale. Health perception was measured by adapting the Cantril Ladder. Illness-related factors were measured by gathering a health history with special attention to duration of illness in years, extent of the disease process in number of joints affected and associated pain (McGill Pain Questionnaire). Data were analyzed by multiple regression to test the hypothesis that illness-related variables influence an individual's self-rating of life satisfaction. There was no significant influence found for illness-related variables. Past and present life satisfaction were rated highly, but expectations for future satisfaction were significantly lower. Some subjects viewed their past life as more satisfying than their

present life. All subjects exhibited an external orientation in health beliefs. Present life satisfaction was found to be significantly related to better health perception, internal health locus of control and less joint pain.

In another study of the quality of life of arthritics, Burckhardt (1985) interviewed and administered questionnaires to 94 subjects ranging in age from 27 to 98 years of age. Burckhardt measured quality of life by three methods: a single item self rating, the Life Satisfaction Index (LSI-Z) and the Domain Satisfaction Scale. Other variables measured were the severity of pain, socioeconomic status, social network configuration, perceived support, severity of impairment, negative attitude and internal control over health. Demographic data were obtained as well. Multiple regression analysis found that five variables accounted for 95 percent of the variance in the quality of life. Self-esteem accounted for 25 percent of the variance in quality of life, internal control over health accounted for 20 percent, negative attitude toward illness accounted for 15 percent, perceived support accounted for 10 percent and severity of impairment for 25 percent of the variance of quality of life. Gender and socioeconomic status contributed minimally to explaining the variance in quality of life.

Few studies have been conducted on post CABG patients' perceptions of life satisfaction and they have generally

operationalized quality of life as return to work or physical activity level. For example, Ross, Diwell, Marsh, Monro and Barker (1978) conducted a follow-up study of 200 consecutive adults over 21 years old who had undergone open-heart surgery (all diagnostic categories, including valve repair) at the Wessex Regional Cardio-Thoracic Center. The subjects were interviewed at the time of referral for surgery, and at two, eight, and 20 months post surgery. Results indicated that 20 months post surgery, 68 percent of the subjects denied limitation of activity, as compared with 12 percent of the pre-op population. Of the subjects in the employable age group, 74 percent were back to work or capable of gainful employment. Ross, et al. concluded that the favorable trends in employment statistics, use of leisure time, mood, and sexual relationships point to "an overall improvement of the quality of life for the majority of patients" (Ross, et al., 1978).

In a similar study conducted by Westaby, Sapsford and Bentall (1979), 130 subjects who had undergone CABG during 1975-1977 because of medically uncontrollable angina were retrospectively evaluated in terms of work capacity and quality of life. Quality of life was operationalized by measuring pain relief, drug requirements, ability to work, recreational, social and sexual activity before and after the surgery. Ages ranged from 34 to 69 years with follow-up from nine to 33 months. In terms of pain relief, 65 percent of

the subjects reported complete relief, 24 percent had considerable improvement and nine percent had moderate improvement. Postoperatively, 60 percent of the subjects returned to work at full capacity. Of the patients preoperatively restricted from engaging in hobbies, social activities and sexual relations, two-thirds could resume these activities postoperatively.

Penckofer and Holm (1983) attempted to measure the subject's perception of quality of life in the first year post CABG by using subjective as well as objective indicators of quality of life. Thirty-four post bypass patients (17 who were three to six months postoperative and 17 who were six to eight months postoperative) responded to an interview question asking subjects to rate their past, present and future life satisfaction according to the Cantril Self-Anchoring Scale. To measure objective indicators of quality of life, patient records were reviewed for information related to the degree of angina experienced before and after surgery, number of city blocks walked before and after surgery and number of hours worked per week before surgery and at the time of the interview. Data were analyzed by two-way ANOVA. There was significantly less anginal pain for all 34 patients following surgery and the level of activity was increased postoperatively for both the three to six month and the six to eight month groups. Both groups reported that future quality of

life would be better. There was also a significant increase in present quality of life for both groups as well.

Most of the studies regarding PTCA have focused on the success of the procedure in terms of decrease in stenosis, recurrence of the stenosis, the improvement of symptoms and the return to work. Much attention has been focused on the monetary benefits of PTCA as opposed to the cost of CABG. For example, Raft, McKee, Popio and Haggerty (1985) compared life adaptation of 32 patients who had undergone PTCA and 15 patients who had experienced CABG. The subjects were demographically matched and had similar pre and postoperative cardiac function. Life adaptation was measured at six and 15 months post PTCA or CABG by the Psychosocial Adjustment to Illness Scale (PAIS). This multidimensional instrument evaluated changes in seven primary life domains: general health, work capacity, domestic atmosphere, sexual performance, family/social support and psychiatric distress. Patients who had undergone PTCA scored significantly better after six months ($p < 0.04$) and after 15 months ($p < 0.05$) than those who had undergone CABG. After six months, patients who had undergone PTCA functioned better in the work, sexual performance and domestic atmosphere domains. This improvement in the work capacity continued at 15 months, however, the change in sexual and family domains became insignificant at this time.

As is evidenced by this review, a vast literature about life satisfaction and its correlates has been developed. Research in this area has only begun, however, to be extended to nonhealthy populations and to questions about the impact of illness and treatment on life satisfaction. There is a great need for studies measuring the impact of treatment modalities of CABG and PTCA on quality of life and perception of health.

Health Perception

Health and health care have become issues of great concern in the last century. Issues such as national health insurance have been addressed in raging debates for two decades. However, the definition of health has yet to be clarified and very little nursing research exists that investigates the dimensions of health. Although health has not been clearly defined in the literature, perception of health and its correlates have been studied as extensively as life satisfaction. In fact, in many studies both variables are studied together (as will be the case in this study). Health perception was shown to be positively related to life satisfaction (happiness) in studies conducted by Watson (1930), Cantril (1965), Wilson (1967), Palmore and Luikart (1972), Edwards and Klemmack (1973), Spreitzer and Snyder (1974), Campbell, Converse and Rogers (1976), Palmore and Kivett (1977), Markides and Martin (1979), Toseland and

Rasche (1980), and LaBorde and Powers (1985). These studies were summarized in the literature review of life satisfaction.

An early study by Bauman (1961) determined the meanings of health and physical fitness held by two groups of individuals (patients and medical students). The relationship of one's meaning or definition of health to other characteristics of the respondents was also explored. Bauman interviewed 201 persons with one or more chronic illnesses as primary diagnoses, who attended the General Medical Outpatient Clinic of the New York Hospital during a three month period in 1958. The diagnoses represented in the study population were arteriosclerotic heart disease, diabetes and psychoneurosis. Also included in the sample was a group of 262 students in their first three years of medical school at an eastern university. The following question: "We are trying to find out more about what people regard as 'health,' or as being 'physically fit.' What do you think most people mean when they say they are in very good physical condition?" (Bauman, 1961) was posed by interview to the clinic patients and by questionnaire to the medical students. A content analysis of the responses was performed to detect recurrent themes. Three general orientations emerged: (1) a general feeling of well-being; (2) the absence of general or specific symptoms of illness, and (3) what a person in good physical condition should be able to do. Clinic patients tended to

emphasize performance (orientation no. 3) more than the medical students, while the medical students tended to emphasize symptoms. Formal education was associated with a symptom-oriented conception of health, while lack of education was associated with a feeling-state orientation.

Prominant social psychologist and gerontologist, George Maddox, conducted several studies concerning the life satisfaction of the elderly (Maddox, 1963), issues in aging (Maddox, 1962), and the self assessment of health status (1962, 1963) among the elderly. Specifically, Maddox (1963) studied the responses of 251 volunteer subjects (aged 60-94 years) to the question: "How do you rate your health at the present time?" The independent variables studied were objective health status, social placement factors and indicators of preoccupation with health and poor adjustment to environment. Objective health status of a subject was determined by a comprehensive medical evaluation. Social placement factors include age, gender, race, the extent of change in roles, occupation, and the level of activity maintained. Analysis of data indicated a significant relationship between subjective assessment of health status as good, older age (70 and above), experience in a nonmanual occupation and a relatively high level of social activity. Conversely, a positive association between low self-rated health status, younger age (60-69), Negro race, experience in manual labor occupations, maximum change in work roles and a relatively low

level of social activity was found.

From a different perspective, McCrae, Bartone and Costa (1976) measured self-rated health in an attempt to determine its relationship to anxious versus adapted individuals. The scores on a self-reported measure of health of two groups of males ranging from age 25 to 82 (N=472) and divided into anxious and adjusted groups were compared. Results indicated that anxious persons are more likely to report symptoms than adjusted persons. These findings are of interest in that they support the idea that individuals who have experienced illness and have misconceptions which cause anxiety would report more symptoms than those who had adjusted to their illness with realistic perceptions of their health status.

Several studies relating self-rated health to mortality have been conducted in the last decade. In these studies, health perception was used as the independent variable, and mortality was the dependent variable. Mossey and Shapiro (1972) found that the chance of death was greater in individuals with poor objective health status, poor self-rated health status, and diminished life satisfaction. Only age was reported to have a more powerful influence on mortality than self-rated health.

In another longitudinal study, Kaplan and Camacho (1983) found that the risk of death was significantly associated with perceived health rating over the nine-year follow-up period.

The association between level of perceived health and mortality persisted in multiple logistic analysis with controls for other variables.

Goldstein, Siegel and Boyer (1984) attempted to determine which variables were predictive of change in self-rated health, conducting nine interviews over a period of 15 months with the first (Summer 1976) and last (Fall 1977) interviews in person and seven interviews at approximately six to eight week intervals by telephone. They found that the changes in perceived health status over the one-year period were not significantly associated with any indicator of objective health status, health belief, health practices or utilization of health services. However, findings did support previous research showing that the level of perceived health status is associated with variations in chronic disease, disability and the utilization of health services.

Garrity, Somes and Marx (1978) studied 314 college students at two points in time to determine correlates of self-rated health. The dependent variable, self-rated health, was measured on a 10-point scale similar to the Cantril Ladder. Independent variables were recent life experience, objective health, current stressfulness of life, psychophysiological symptomatology (anxiety), socioeconomic status and gender. Anxiety was the strongest correlate of health perception. Illness experience, life changes and

perceived stressfulness were moderately correlated to health perception. All four variables were related to perceived health status in the direction expected, i.e., greater anxiety, recent illness, life changes and perceived life stress were associated with lower self-rated health status. The socioeconomic status and gender of the respondents were found to be unrelated to perceived health.

In a recent study, Clancy, Wey and Guinn (1984) measured the effect of patients' perceptions on subsequent return to work after coronary bypass surgery. Questionnaires were mailed to 109 male patients, aged 43-67, at one year post-op. Results were based on the 69 responding patients who reported they were not retired preoperatively. Of the 14 patients who perceived their health as good, 100 percent returned to work; but of the 13 who perceived their health as poor, only 30 percent reported they had returned to work. This study is significant in that it is concerned primarily with the patients' perceptions, and not those of the professional.

Summary

The concepts of health and health perception remain unclearly defined. The recent trend has been to include subjective as well as objective criterion for determining an individual's level of health. Little research has been conducted to ascertain the determinants of health perception

or the relationship of health perception and self rating of quality of life, particularly in cardiac patients. This study is in part a replication of previous studies in its examination of health perception, anginal symptoms and life satisfaction. In addition, this study will investigate the above variables as they pertain to the CABG and PTCA patient.

CHAPTER THREE

Methodology

Introduction

The prevalence of coronary artery disease is well documented in the professional literature. The morbidity associated with CAD is costly in terms of monetary expenditures as well as human suffering. No studies were found that attempted to determine the relationship between life satisfaction, health perception and anginal symptoms in CABG and PTCA patients. This study will replicate previous studies in its attempt to measure life satisfaction and health perception in a specific group of individuals. This study examined the perceived health status, anginal symptoms and life satisfaction in CABG patients and patients who had PTCA with the intent of describing the interrelationships among the variables and differences between the groups.

Research Method

A descriptive correlational research method was used. The purpose of this type of study is to "...discover the relationship among variables rather than to infer cause-and-effect relationships" (Polit and Hungler, 1983:177). The variables studied were health perception, life satisfaction

and anginal symptoms in the CABG and PTCA patient. Health perception, anginal symptoms and life satisfaction were measured by self placement along a vertical visual analog scale.

Procedure

Approval of procedures for human subjects' protection by the School of Nursing Research Committee was obtained prior to data collection. Written permission to conduct the study was obtained from the senior partner of the private cardiology practice which served the two offices where data were collected. In addition, verbal permission to interview patients was obtained from each of the remaining three physicians associated with this practice.

After CABG or PTCA, contact was made with the subjects during the first follow-up visit, usually six to eight weeks post procedure. The subject was approached in the examination room after being examined by the physician. The purpose of the study, method of data collection and the amount of time required for the interview were discussed with the subject at that time. Consent for the study was obtained after the subject was assured of anonymity and the voluntary nature of the study (Appendix A). A copy of the consent form was given to the subject after it was signed.

Data were collected in a 20 to 30 minute interview with each subject. The subjects were shown vertical visual analog scales on which the endpoints were labeled "the best possible

health/the worst possible health," "the best possible life/ the worst possible life" and "most uncomfortable angina/no angina" (Appendix B). The subjects were then asked to place a perpendicular mark at the point on the scale at which they perceived their present (at the time of the office visit), past (one week before the procedure) and expected future (12 months after the procedure) health. This procedure was repeated for the "best possible life/worst possible life" and "most uncomfortable angina/no angina" analog scales. The order of presentation of analog scales was randomly selected from a pool of six sequences. Demographic data were obtained at this time by asking the subject additional questions regarding his/her age, marital status, occupation, retirement, educational level and income and recording the responses.

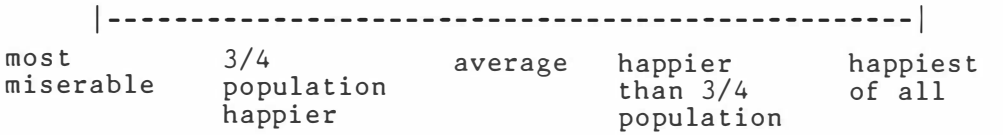
Setting, Population and Sample

A nonprobability sample of convenience was drawn from the accessible population of CABG and PTCA patients treated by any of the four cardiologists practicing in the two offices of a private cardiology practice in Richmond, Virginia. A total of 13 patients was treated by PTCA during the period of July 7 to August 19, 1986. Of those 13 patients, two (11.7%) were referral patients from another cardiologist and were followed at the referring office, two (11.7%) had CABG surgery before data collection began,

six (46%) did not make follow-up appointments during the data collection period, and three (17.6%) were interviewed for this study. A total of 23 patients was treated by CABG during the period of July 7 to August 19, 1986. Of those 23 patients, three (13%) expired, 15 (65.2%) did not make follow-up appointments during the data collection period, and five (21.7%) were interviewed for this study. Of the subjects approached for inclusion in the study, none refused. Of all the patients eligible for inclusion in the study, 22 percent were included in the study. Consequently, the sample consisted of the first eight patients (three PTCA patients and five CABG patients) to return to the site for their six to eight week follow-up evaluation and who agreed to participate during the period of data collection from August 21 to September 15, 1986.

Instrumentation

The instrument used to measure health perception, anginal symptoms and life satisfaction was a variation of a graphic rating scale. The graphic rating scale (GRS) originated in the Scott Company Laboratory in 1920 as a method of rating subordinates by superiors (Hayes and Patterson, 1921). It consisted of a combination of the methods of rating on a line and by checking descriptive terms. Watson (1930) used a variation of this type of scale to measure the happiness of 388 graduate students. An example of Watson's scale is below:



The advantages of using a GRS are:

1. the subject is free from direct quantitative terms,

2. the subject can make as fine a discrimination as he wants (Hayes and Patterson, 1921).

3. it is easy for the subject to understand,

4. it is quick to complete, and

5. it does not require much subject motivation (Freyd, 1923).

The variation of the GRS used in this study was the vertical visual analog scale (VAS). It is a 100 mm. vertical line whose endpoints are the extremes of the variables being measured. There were no markings (such as numbers or terms) between endpoints. This prevents the possibility of repetition of preferred digits or terms (Aitken, 1969). It is customary to measure in millimeters the distance from the subject's mark to one end of the line. The lower end of the line was used in this study. This number was then subjected to analysis. A vertical scale was used, as scores on the horizontal scales have been found to be slightly lower than those from the vertical scales (Scott and Huskisson, 1979). Visual analog scales have been used most notably in the subjective measurement of pain and drug efficacy (Huskisson,

1974; Joyce, Zutshi, Hrubes and Mason, 1975; Downie, Leatham, Rhind, Wright, Branco and Anderson, 1978).

Reliability

Bond and Lader (1970) conducted a study in which 16 analog scales (e.g., happy.....sad, tranquil.....troubled) were administered to 500 subjects between the ages of 16 and 64 years. Test-retest reliability was not feasible, as the scale was measuring the immediate state of the subject, as opposed to a stable phenomenon or trait. However, there was consistency among certain items (e.g., contented.....discontented and happy.....sad) with correlations as high as .65 (Bond and Lader, 1974).

Meltzer and Hochstim (1974) investigated the reliability and validity of self-reported health surveys as part of a research program conducted by the Human Population Laboratory of the California State Department of Public Health. The purpose of the study was to determine how consistently people "answered questions about their health when a survey is repeated after a short interval" and how closely the "information collected by survey agrees with that obtained from clinical records" (Meltzer and Hochstim, 1970). A probability sample of 1,5300 Alameda County residents was asked to complete two identical health surveys one week apart. Results indicated a high index of reliability with an overall

score of 82 on a scale of 100. The index of reliability for chronic illnesses was 89. Therefore, since CAD is considered a chronic illness, self reports of perceived health and anginal symptoms for the three time periods in which the variables are being measured would be a reliable indicator of the health status and level of anginal symptoms experienced by the subject.

Validity

Feelings and perceptions are subjective phenomena and beyond analysis (Aitken, 1969). The validity of subjective measures is difficult to establish. Validity is assumed in this tool because it is self anchoring. The tool is self anchoring in that the subject assigns his own meanings to the extremes of the variables being measured by this tool (health, anginal symptoms and life satisfaction).

Validity of the self-anchoring graphic rating scale has been addressed by Cantril (1976) in his preliminary interviews of 3,000 subjects around the world to obtain quantitative comparisons of the reported elements that make for a satisfying life. He noted that subjects who reported the existence of those elements in their lives scored higher on the Cantril Ladder.

Meltzer and Hochstim (1970) found validity scores for a self-reported health survey to be lower than reliability scores. However, the index of agreement was 52 on a scale of

100. This score indicates that about half of the chronic conditions reported on the survey were recorded on the clinical records. The discrepancy between reported chronic illnesses and recorded illnesses was explained in part by the incompleteness of some of the clinical records.

Plan of Data Analysis

The analog scales were scored by measuring in millimeters from the bottom of each scale to the mark placed by the subject. The means of the scores for the three variables were calculated. The Kruskal-Wallis one-way analysis of variance statistic was used to detect statistically significant differences between the two groups of subjects. Because the sample size was small, graphs were constructed to illustrate the relationships among the variables rather than computing correlation coefficients. Demographic data were subjected to descriptive analysis by group.

CHAPTER FOUR

Data Analysis

Introduction

A descriptive correlational design was used to examine the level of perceived health status, anginal symptoms and life satisfaction in patients after CABG and PTCA. The interrelationships among these variables were also explored. Past, present and future perceived health, anginal symptoms and life satisfaction were measured by the subject's self placement along 100 mm. vertical analog scales with the extremes labeled "the best possible health/the worst possible health," "the best possible life/the worst possible life" and "the most uncomfortable angina/no angina." Demographic data was also collected at the time of the interviews.

Demographic Data

Descriptive statistics for the demographic data were calculated for each group. The ages for the CABG group (n=5) ranged from 39 to 78 with a mean age of 60.2 years (SD = 14.8). The ages for the PTCA group (n=3) ranged from 50 to 61 with a mean age of 57.3 years (SD = 6.35).

All subjects in both groups were married. Of the three subjects in the PTCA group, one was employed in manual labor,

one was employed in a professional/administrative occupation, and one was retired due to an arthritic condition. Of the five subjects in the CABG group, one was employed in a clerical position, one was in a professional/administrative position, and three were retired before diagnosis of CAD. The PTCA group consisted of two females and one male. Subjects in the CABG group were all male. A description of age, gender, occupation and retirement status is shown in Table 1.

Table 1

Occupation, Retirement Status, Gender and Age of Subjects by Diagnostic Group

Group	Occupation	Retirement Status	Gender	Age
CABG				
Subj 1	Salesman	Not retired	Male	53
Subj 2	School administrator	Retired	Male	68
Subj 3	Production planner	Not retired	Male	39
Subj 4	College professor	Retired	Male	63
Subj 5	Printer	Retired	Male	78
PTCA				
Subj 1	Small business owner	Not retired	Male	61
Subj 2	Secretary	Retired	Female	61
Subj 3	Machine operator	Not retired	Female	50

The educational level of the subjects ranged from high school graduate to college graduate. Of the five subjects in the CABG group, two had graduated from high school, one had attended college and two had graduated from college.

Two subjects in the PTCA group were high school graduates and one subject had attended college. A distribution of subjects by educational level and income is shown in Table 2.

Table 2

Education and Yearly Income of Subjects by Group

	CABG	PTCA
Education		
< High School	0	0
High School Graduate	2	2
Some College	1	1
College Graduate	2	0
Yearly Income		
$10,000-20,000	1	2
$20,000-30,000	3	1
$30,000-40,000	0	0
$40,000-50,000	0	0
over $50,000	1	0

The income range for subjects was $10,000 to over $50,000 per year. Of the five subjects in the CABG group, one had an income range of $10,000 to $20,000, three had a range of $20,000 to $30,000 and one had an income range of above $50,000 per year. Of the three subjects in the PTCA group, two had income ranges of $10,000 to $20,000 and one had a range of $20,000 to $30,000 per year.

The number of days post procedure ranged from 31 to 56, with a mean of 44.5 days. The range for the CABG group was

40 to 56 days, with a mean of 48.2. The range for the PTCA group was 31 to 48 days, with a mean of 38.3 days.

Perceived Health, Anginal Symptoms and Life Satisfaction

Perceived past, present and future health status, anginal symptoms and life satisfaction were measured by the subject's self placement along vertical visual analog scales with the extremes labeled "the best possible health/the worst possible health," "the best possible life/the worst possible life" and "the most uncomfortable angina/no angina." Scores on the nine analog scales were calculated by measuring in millimeters from the bottom of the scale to the subject's mark. Scores were obtained for past, present and future health perception, anginal symptoms and life satisfaction. Because the extremes of the anginal symptoms scale were reversed from those of the health and life satisfaction scales, scores for the anginal symptoms scale were subtracted from 101 so that a high score would indicate the ideal state for all three variables. Possible scores ranged from zero to 101. Means were calculated for each of the nine scores. In addition to the perceived past, present and future health perception, anginal symptoms and life satisfaction, the change from the past to the present, and from the present to the future, was calculated for all three variables. This calculation was performed by subtracting the past score from the present, and the present score from the future.

Mean scores for past, present and future perceived health in the CABG group were 64.2, 93 and 88, respectively. In the PTCA group, mean scores for past, present and future perceived health were 39.9, 43.3 and 91, respectively. Figure 1 plots the mean scores for past, present and future health perception for each group.

The respective mean scores for past, present and future anginal symptoms in the CABG group were 62.8, 100.6 and 101. In the PTCA group, the respective mean scores for past, present and future anginal symptoms were 35.6, 59.3 and 97. Figure 2 plots the mean scores for past, present and future anginal symptoms for each group.

Mean scores for past, present and future life satisfaction in the CABG group were 74.4, 96.2 and 87.8, respectively. In the PTCA group, the mean scores for past, present and future life satisfaction were 45.3, 54.3 and 92.3, respectively. Figure 3 plots the mean scores for past, present and future life satisfaction in each group. Means and standard deviations for the dependent variables for the total sample and by group are shown in Table 3.

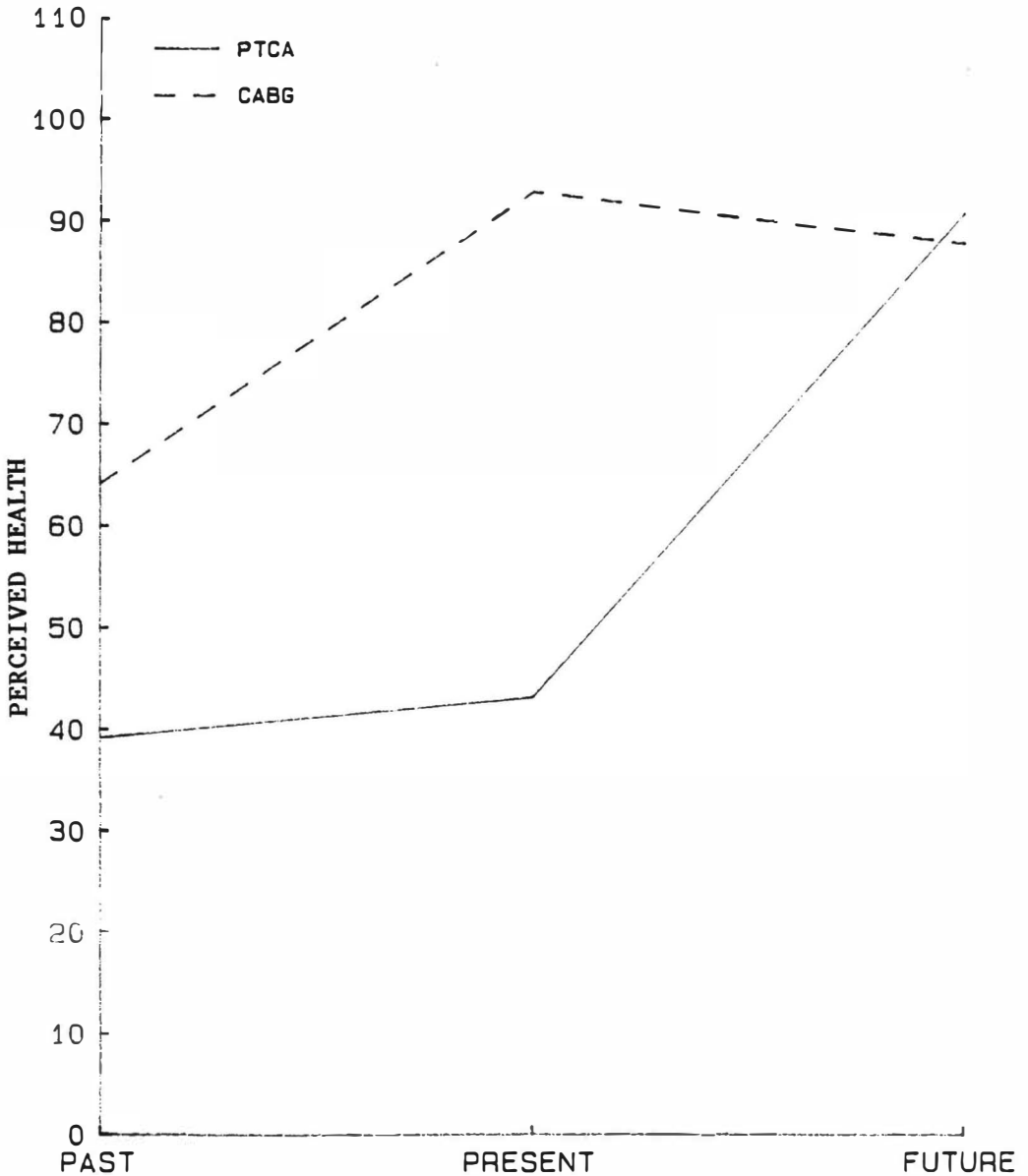


Figure 1

Perceived Past, Present and Future Health
After CABG and PTCA

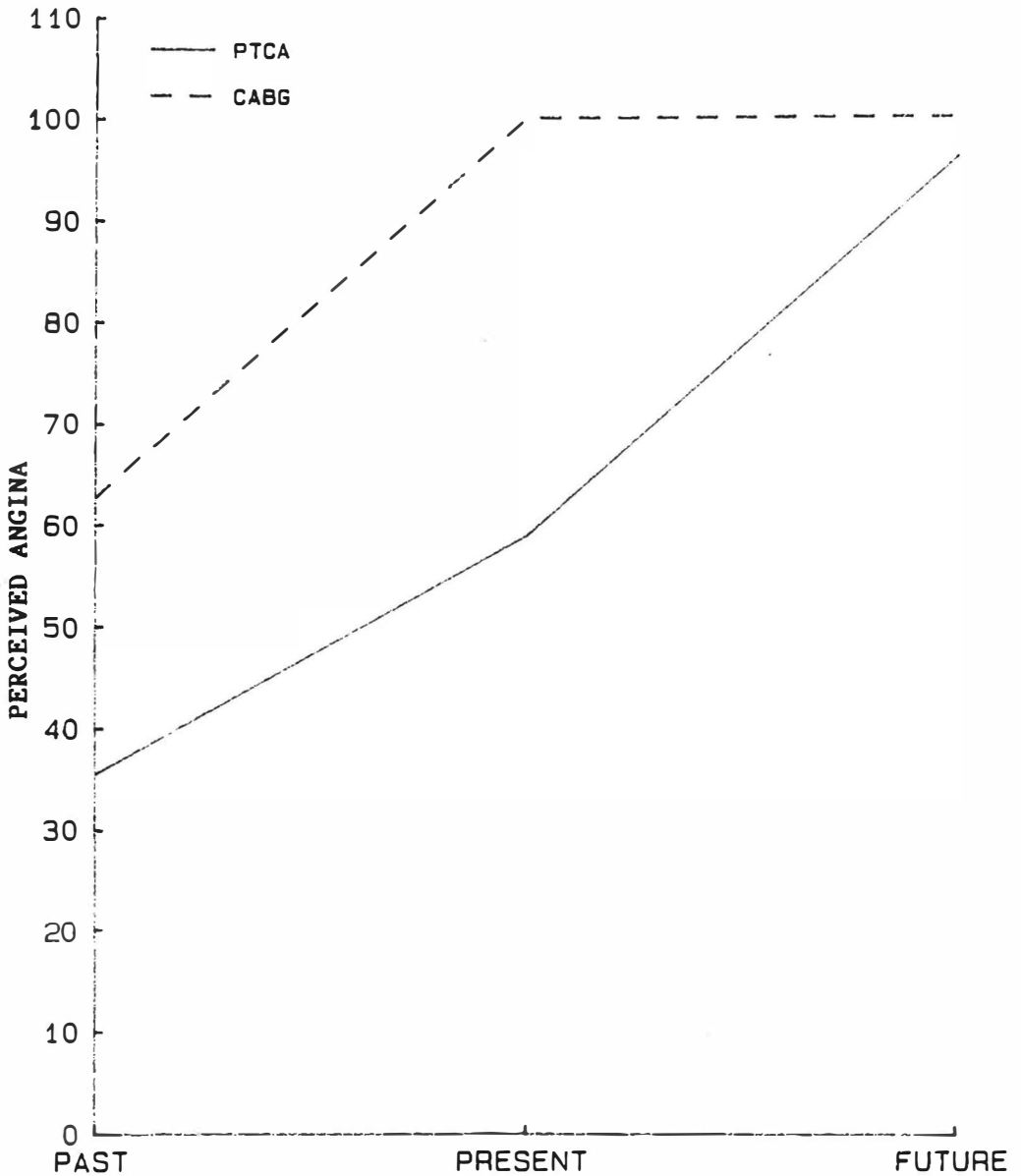


Figure 2

Perceived Past, Present and Future Anginal Symptoms After CABG and PTCA

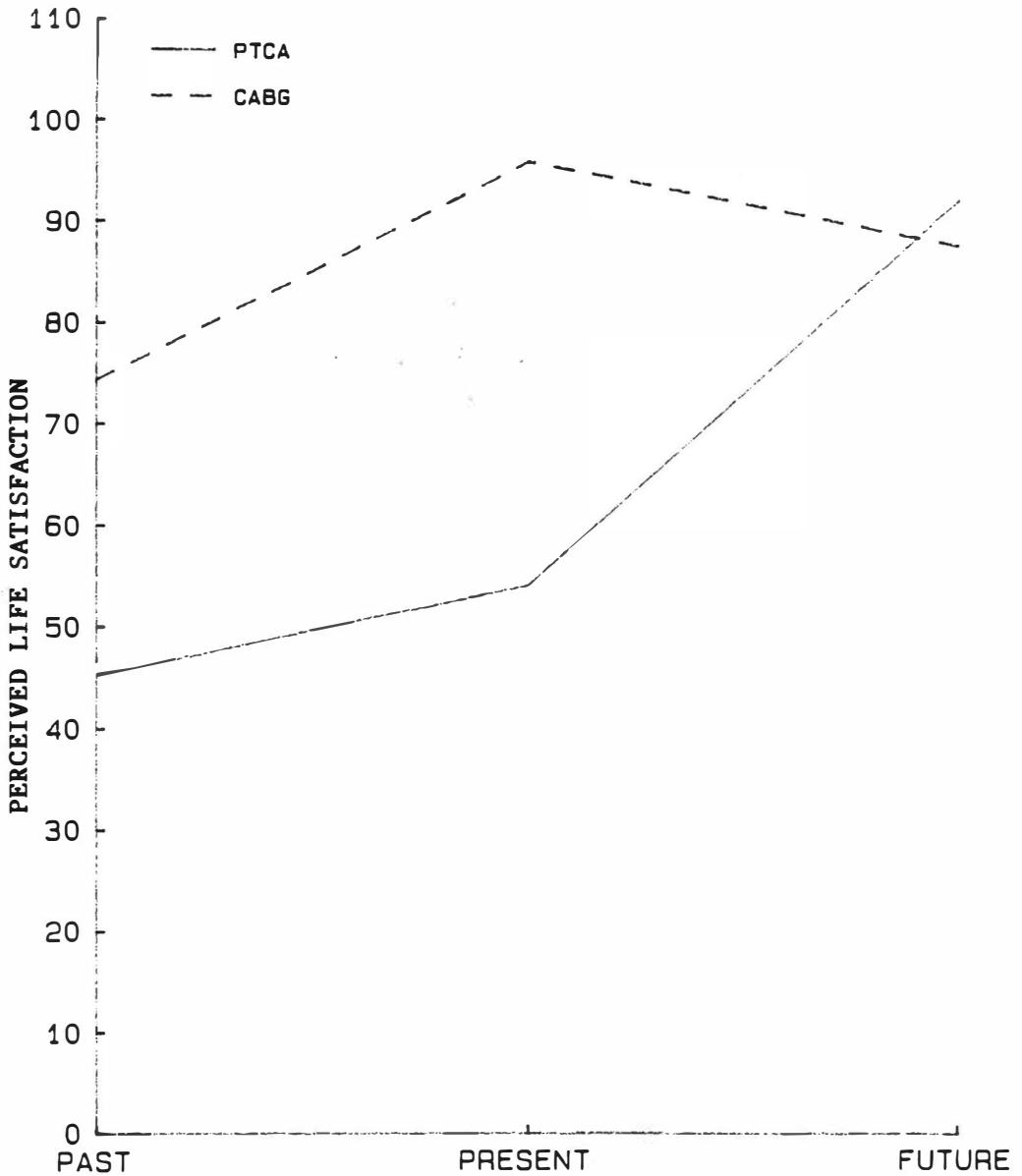


Figure 3

Perceived Past, Present and Future Life Satisfaction After CABG and PTCA

Table 3

Means and Standard Deviations for Variables for Total Sample and by Group

	Group					
	CABG (n=5)		PTCA (n=3)		Total (n=8)	
Variable	Mean	S.D.	Mean	S.D.	Mean	S.D.
Health Perception						
Past	64.2	25.2	39.3	30.4	54.8	23.1
Present	93.0	7.6	43.3	11.6	74.3	27.0
Future	88.0	20.4	91.0	9.6	89.1	16.3
Anginal Symptoms						
Past	62.8	50.1	35.6	30.6	52.6	43.5
Present	100.6	0.9	59.3	38.9	85.1	29.8
Future	101.0	0.0	97.0	1.0	99.5	2.1
Life Satisfaction						
Past	74.4	29.1	45.3	33.7	63.5	32.2
Present	96.2	5.5	54.3	27.0	80.5	26.4
Future	87.8	21.3	92.3	8.9	89.0	16.9

The changes in perception of health and life satisfaction from the present to future were in a negative direction (lower scores) in the CABG group. However, the change in perception of anginal symptoms was in a slightly positive direction for this group. The changes in perception of health status, anginal symptoms and life satisfaction for past to present and present to future in the PTCA group were all in a positive direction (higher scores).

Means of the scores for the nine analog scales were subjected to one-way analysis of variance using Kruskal-Wallis statistic. This method of data analysis was used due to the small sample size. Results of data analysis indicated significant differences between the two groups in the following: present life satisfaction, present health perception, present anginal symptoms, future anginal symptoms, the change in health perception between now and the future, the change in anginal symptoms between now and the future and the change in life satisfaction between now and the future. The mean rank, x and significance for the above variables are shown in Table 4.

Table 4

Rank Scores, Chi Square Values and Level of Significance of Variables by Group

Variable	Mean Rank CABG (N=5)	Mean Rank PTCA (N=3)	x	p
Health Perception				
Past	5.2	3.3	1.08	0.2967
Present	6.0	2.0	5.00	0.0253
Future	4.8	4.0	0.20	0.6528
Past/Present	4.6	4.3	0.02	0.8801
Present/Future	3.0	7.0	5.06	0.0245
Anginal Symptoms				
Past	4.8	4.0	0.20	0.6508
Present	6.0	2.0	5.67	0.0172
Future	6.0	2.0	6.56	0.0104
Past/Present	4.8	4.0	0.20	0.6528
Present/Future	3.0	7.0	5.67	0.0172
Life Satisfaction				
Past	5.4	3.0	1.82	0.1771
Present	6.0	2.0	5.25	0.0219
Future	4.6	4.3	0.02	0.8808
Past/Present	5.0	3.6	0.55	0.4561
Present/Future	3.0	7.0	5.00	0.0253

Kruskal-Wallis statistic is distributed as chi square, with one degree of freedom.

The PTCA group scored lower on all three variables (health perception, anginal symptoms and life satisfaction) for the past than the CABG group, however, the difference was not statistically significant. The CABG group scored higher than the PTCA group for anginal symptoms for the future.

The difference in scores on all three variables for the present was significant. The PTCA group scored slightly higher than the CABG group for health perception and life satisfaction in the future, however, they scored slightly lower than the CABG group for anginal symptoms. The PTCA patients scored an expected change that was significantly different from the CABG group in all three variables from the present to the future.

The mean scores for all three variables at all time periods were plotted on a line graph to illustrate suggested correlations between the three variables within each group (Figure 4). The curve of the plotted mean scores assumed similar shapes in both groups. The consistency of the shape of the curve indicated a possible correlation between health, anginal symptoms and life satisfaction within the group. There was a difference between groups on the shape the plotted means assumed.

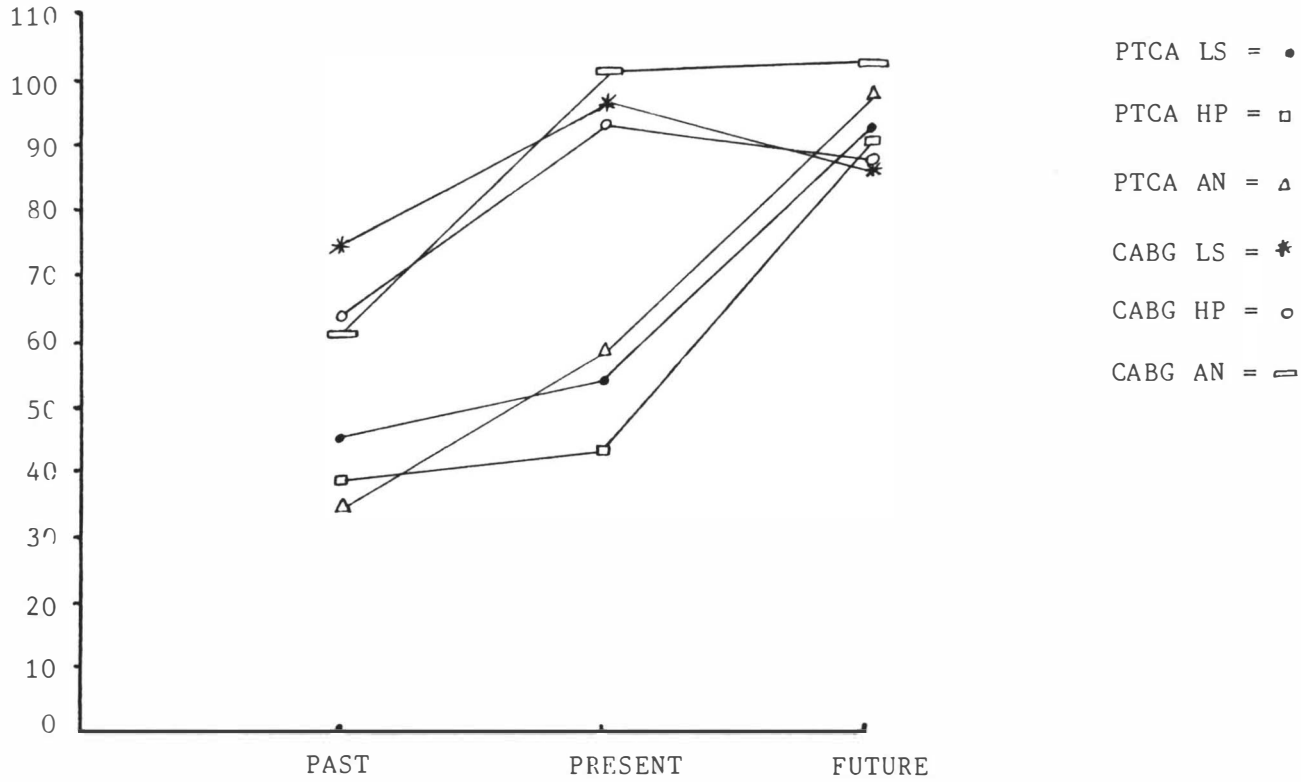


Figure 7

Perceived Past, Present and Future Health, Angina Symptoms and Life Satisfaction After CABG and PTCA

Summary

In summary, persons who had PTCA perceived themselves as less healthy now, were less satisfied with their lives and perceived themselves as having more anginal symptoms than persons in CABG group. In addition, the PTCA group was more optimistic and expected a greater degree of change in all three variables for the future. Persons who had CABG perceived their health, anginal symptoms and life satisfaction to be much improved over the past. In unexpected findings, the CABG group expected a slight decrease in health and life satisfaction for the future. There appeared to be a correlation between perceived health, anginal symptoms and life satisfaction in all three time periods for both groups.

Discussion

The findings regarding CABG patients were similar to those of Penckofer and Holm (1983). Patients in both groups (patients three to five months and six to eight months postoperative) reported less angina after surgery ($\bar{X}$ = 4.73, SD = .89) than before ($\bar{X}$ = 1.97, SD = .83). Patients six to eight months postoperative perceived both their present ($\bar{X}$ = 8.03, SD = 1.69) and future ($\bar{X}$ = 8.76, SD = 1.35) satisfaction with life to be improved. In addition, the improvement from the present to the future was expected to be less than the improvement experienced from the past to the present. Penckofer and Holm (1983) used a 10 cm. Cantril Ladder to

measure life satisfaction.

Laborde and Powers (1980) found past life satisfaction for both hemodialysis (6.2) and osteoarthritic patients (6.2) to be equally low. However, present life satisfaction was found to be significantly lower ($F = 4.81$, $p < .05$) for arthritics ($M = 5.2$) than for hemodialysis ($M = 7.2$) patients. Hemodialysis patients also expected higher life satisfaction in the future ($M = 8.5$) than the osteoarthritics (7.1), but the difference was not significant. Laborde and Powers (1980) suggested that the lower perceptions in present and future life satisfaction may have been related to the physical discomfort associated with arthritis. In addition, they proposed that an increased sense of physical well-being in the dialysis group may be attributed to the patient's meaning of the hemodialysis procedure. The perceptions of present and future life satisfaction in the hemodialysis patients are similar to those of the CABG patients in this study. The perceptions of present and future life satisfaction in the osteoarthritics are similar to those perceptions of the PTCA patients.

CHAPTER FIVE

Summary, Conclusions, Implications and Recommendations

Summary

The purpose of this study was to gather data about the perception of health status, anginal symptoms and life satisfaction in CABG and PTCA patients. The study explored the interrelationships among health perception, anginal symptoms and life satisfaction as well as possible differences between the two groups regarding these variables.

The conceptual framework for this study was based on the social theory of symbolic interactionism and the nursing model of man-living-health (Parse). In this framework, the client's past experiences, relationships with the world and others and personal interpretation are considered to be the particular constituents of which a situation (illness) is composed. These constituents generate the meaning (perceived health, anginal symptoms and life satisfaction) of the situation for the individual. The goal of nursing action is to help the client to understand the meanings, clarify misconceptions and choose the possibilities of living which would facilitate health. To help the client select appropriate health behavior choices and plan effective intervention, the

nurse needs to be aware of commonly occurring attitudes and perceptions in the CABG and PTCA patients.

Past, present and expected future perceived health status, anginal symptoms and life satisfaction were measured by self placement along analog scales during a 30 minute interview at the time of the patient's follow-up visit to the physician's office four to eight weeks after CABG or PTCA. Demographic data were also collected at that time. The sample consisted of five CABG patients and three PTCA patients. The Kruskal-Wallis one-way analysis of variance statistic was used to identify the statistically significant differences between the two groups.

Findings and Conclusions

The findings are summarized below:

1. The mean scores for the CABG group were low for the past and much higher for the present on all three variables. The mean scores for the future were higher than the present for anginal symptoms, but lower for health and life satisfaction. In other words, the change in all three variables was substantial from the past to the present and minimal from the present to the future in the CABG group.

2. The mean scores for the PTCA group were low for the past, only slightly higher for the present and much higher for the future. In other words, the change in all three variables was minimal from the past to the present and substantial from the present to the future in the PTCA group.

3. A significant difference was found between the two groups in their perceived present health, anginal symptoms and life satisfaction, with the CABG group scoring higher on all three variables. In other words, the CABG group felt they were healthier, less troubled by angina, and happier for the present than the PTCA group.

4. A significant difference was found between the groups in their perceived future symptoms, with the CABG group expecting less anginal symptoms, but lower levels of health and life satisfaction.

5. A significant difference was found between the two groups in their perceived change in health, anginal symptoms and life satisfaction from the present to the future, with the PTCA group scoring a greater expected change.

6. As illustrated in Figure 4, the mean scores for perceived health, anginal symptoms and life satisfaction in the PTCA group plot a similar curve on a line graph. This suggests a correlation between the three variables for all three time periods.

7. The mean scores for perceived health, angina symptoms and life satisfaction in the CABG group plot similar curves on a line graph (Figure 4) for all three time periods, indicating a probable correlation between the three variables.

Based on these findings, the following conclusions were reached:

1. Persons who had CABG perceived a greater reduction in anginal symptoms and increase in health and life satisfaction at four to eight weeks post procedure than they expected to attain in the future. In fact, the CABG patients expected a slight decrease in level of health and life satisfaction in the future.

2. Persons who had PTCA perceived the reduction in anginal symptoms and increase in health and life satisfaction to be minimal at four to eight weeks post procedure. However, they expected the reduction in anginal symptoms and increase in health and life satisfaction to be much greater in the future.

Limitations

Several limitations in the study would indicate the need for caution in considering the findings. The study was limited by the use of a sample of convenience and small sample size. Specifically, mean scores for future life satisfaction and health were lowered by one subject's

extremely low ratings. Data collection was limited to three weeks. Patients were not consistent in scheduling follow-up appointments. Subjects were interviewed at various stages (four-eight weeks) of recovery after CABG or PTCA, and were at different levels of functioning. The process of recovery from the two procedures (CABG and PTCA) involved differs, with the PTCA patient returning to preoperative activity two-three days after procedure and the CABG patient returning to this level of activity much later. The study relied on interview data. Since the interviews were conducted in the physician's office, subjects may have been hesitant to report true perceptions of the variables studied. In addition, perception of the procedure itself in terms of cost, days of hospitalization and invasiveness could have influenced the subject's perception of health, anginal symptoms and life satisfaction.

Several characteristics of the subjects may have influenced their perceptions of health, anginal symptoms and life satisfaction. Two subjects were treated on an emergency basis and may have ascribed different meanings to the procedure as it may have been seen as a lifesaving measure as opposed to an elective procedure. One subject had CABG after unsuccessful PTCA. His exceptionally low scores for future health and life satisfaction may have been influenced by this. In addition, considering the small sample size of this study, these isolated low scores may have resulted in the

lower average scores for future health and life satisfaction in the CABG group. One subject had severe arthritis, which she verbalized as impacting on her perceived health and life satisfaction. Finally, although the sample of patients treated by PTCA had single vessel CAD, the possibility of the subject having more than one stenosed vessel exists. This situation would influence the level of anginal symptoms regardless of the success of the procedure.

Implications

Life satisfaction has been widely studied for the last 50 years. Early studies concentrated on identifying the correlates of life satisfaction (Watson, 1930; Bradburn and Caplovitz, 1965; Cantril, 1965). By the early 1970's, emphasis was placed on nondemographic variables (such as health) in attempting to determine the variables most predictive of life satisfaction. Perceived health was implicated as most predictive of life satisfaction in several studies (Palmore and Luikart, 1972; Edwards and Klemmer, 1973; Markides and Martin, 1979). Few studies have been conducted which examine perceived health and life satisfaction in particular diagnostic groups (Penchofer and Holm, 1983; Laborde and Powers, 1985; Burckhardt, 1985). This study described the level of perceived health, anginal symptoms and life satisfaction in CABG and PTCA patients. The interrelationships between the variables were investigated

as well. The results of this study have implications for nursing practice, education and research.

The implications for nursing practice relate to the conceptual framework for this study. The goal of the primary health care provider is to assist the client in making health behavior choices that would promote health. Secondary prevention strategies would involve identifying misconceptions held by the CABG or PTCA patient regarding health and illness. For example, the patient's expectations of the benefit of the procedure would influence his/her perception of health and anginal symptoms. A patient who experienced PTCA and who believed that the procedure would eliminate angina would perceive even minimal angina to be troublesome. In contrast, the patient who realized that he had multivessel stenoses and that a certain amount of angina is inevitable from the remaining stenoses would perceive minimal angina to be an improvement. When misconceptions and unrealistic expectations commonly experienced by the CABG and PTCA patient have been identified, the professional nurse can anticipate these and begin early intervention. A primary prevention strategy used in the care of the individual with CAD would be to use knowledge about commonly occurring misconceptions to intervene before the procedure with careful and realistic instruction.

Descriptive studies that are focused on the perceptions of patients provide the information required to guide the professional nurse in the approach to the care of the CABG and PTCA patient. Studies of this nature also generate ideas for future research in this area.

Recommendations

Recommendations for future investigation of perceived health and life satisfaction in this population are:

1. Replication of this study on a larger scale and as part of a longitudinal study involving data collection at eight to 12 weeks, 12 months and seven years post procedure.

2. Obtain additional descriptive data, such as the subject's personal definitions of health and life satisfaction. This would provide additional information pertaining to the meaning of these variables to the patient.

3. Measure perceived physical activity level in addition to health, anginal symptoms and life satisfaction. Examine the interrelationships between the four variables in CABG and PTCA patients.

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APPENDIX A

INFORMED CONSENT

Informed Consent

Dear patient:

I am a registered nurse studying for a Master's degree at the Medical College of Virginia. In partial fulfillment of the requirements for this degree I am conducting a study on how patients who have had bypass surgery or the balloon dilatation procedure are feeling six weeks after their discharge from the hospital. I am also interested in how you rate your own health since your hospitalization.

Your participation in this study will involve an interview in which you will be asked how you feel about your health and life since your bypass surgery. This interview is expected to take only 30 minutes. Your answers to all questions will be confidential. You will be identified by using a number.

Your participation in this study is strictly voluntary. You may withdraw from the project at any point. Your decision to participate or not to participate in this project will not affect your care at this office. Although your participation in this project will not have any direct benefits to yourself, the information you supply will improve the future care of patients like yourself. I will answer any questions you may have at any time during our meeting.

Signed:

Dana C. Porter, R.N.
[redacted]

Subject's statement:

I have read the above description of the study, and I voluntarily consent to participate. I have had an opportunity to ask questions and understand that I may withdraw at any time. I have been given a copy of this consent.

_____ _____

(Signature) (Date)

Informed Consent

Dear patient:

I am a registered nurse studying for a Master's degree at the Medical College of Virginia. In partial fulfillment of the requirements for this degree I am conducting a study on how patients who have had bypass surgery or the balloon dilatation procedure are feeling six weeks after their discharge from the hospital. I am also interested in how you rate your own health since your hospitalization.

Your participation in this study will involve an interview in which you will be asked how you feel about your health and life since your balloon dilatation. This interview is expected to take only 30 minutes. Your answers to all questions will be confidential. You will be identified by using a number.

Your participation in this study is strictly voluntary. You may withdraw from the project at any point. Your decision to participate or not to participate in this project will not affect your care at this office. Although your participation in this project will not have any direct benefits to yourself, the information you supply will improve the future care of patients like yourself. I will answer any questions you may have at any time during our meeting.

Signed:

Diana C. Porter, R.N. [redacted]

Subject's statement:

I have read the above description of the study, and I voluntarily consent to participate. I have had an opportunity to ask questions and understand that I may withdraw at any time. I have been given a copy of this consent.

_____ _____

(Signature) (Date)

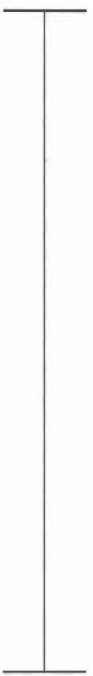
APPENDIX B

ANALOG SCALES

BEST POSSIBLE
HEALTH

WORST POSSIBLE
HEALTH

BEST POSSIBLE
LIFE



WORST POSSIBLE
LIFE

THE MOST UNCOMFORTABLE
ANGINA

NO ANGINA

VITA

[redacted]