THE RELATIONSHIP OF PERCEIVED RESOURCES AND PERCEIVED MARITAL FUNCTIONING IN THE HUSBAND AND WIFE POST-MYOCARDIAL INFARCTION

By

Jill Kresge Rogers

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ABSTRACT

THE RELATIONSHIP OF PERCEIVED RESOURCES AND PERCEIVED MARITAL FUNCTIONING IN THE HUSBAND AND WIFE POST-MYOCARDIAL INFARCTION

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The mediating effect of various resources on marital functioning post-MI has been studied infrequently to date. A descriptive correlational study was thus conducted to ascertain the relationship between perceived resources and perceived marital functioning in the husband and wife post-myocardial infarction. Data were taken from an earlier research study (Kline & Warren, 1981). The sample consisted of 97 married couples in which the husband had experienced a myocardial infarction within the past 12 months. Subjects completed a marital functioning instrument and sociodemographic questionnaire. The Pearson product-moment correlation coefficient and step-wise multiple regression were employed to analyze the data. Husbands' and wives' perceptions of the importance of the husband's social contacts, religion, and medical resources were significantly correlated with marital functioning for both partners. Religion was the best predictor of marital functioning for the husbands, while medical resources best predicted marital functioning for the wives.

To Russ: my friend, my love, and

my constant catalyst for growth

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is an honor; to share a friendship with such friends as these is a gift.

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CHAPTER I

INTRODUCTION TO THE STUDY

Introduction

Coronary heart disease, a major clinical manifestation of which is the myocardial infarction (MI), poses a major health problem in the United States. In 1981 alone, 559,000 people in this country died of myocardial infarctions. Despite a steady decrease in mortality since 1968, coronary heart disease remains the leading cause of death in the United States yearly (National Heart, Lung, & Blood Institute, 1982). The American Heart Association (1984) estimated that there are 4,600,000 Americans still living who have experienced an MI. The incidence may be as high as 1,500,000 victims per year (American Heart Association, 1984). In Michigan alone, over 13,000 individuals die of myocardial infarctions each year (American Heart Association, 1984).

Individuals who suffer an MI will be affected by the experience, not only physically, but psychologically and socially as well. An MI is a crisis of major dimensions: life-threatening, painful, and debilitating. The occurrence of an MI transforms those who experience it from healthy individuals into persons who must live the remainder of their lives with the knowledge of the potential consequences of their condition (Croog & Levine, 1977).

Background of the Problem

Researchers have extensively studied the emotional and psychological consequences of an MI upon the individual experiencing it. Denial (Croog, Shapiro, & Levine, 1971), depression (Hackett & Cassem, 1975), and anxiety (Mayou, Foster, & Williamson, 1978a) are common symptoms of MI patients during convalescence. Psychological distress may persist up to 1 year post-infarction with patients reporting tension, anxiety, fatigue, irritability, and depression (Mayou et al., 1978a).

The psychological trauma of a heart attack leaves its impact on the victim's family as well, particularly on the spouse. According to Skelton and Dominion (1973), wives of MI patients report the convalescent period to be stressful due to marital tension resulting from their husbands' dependency and irritability. Interpersonal friction may result from conflict regarding the patient's therapeutic regimen and the wife's overprotectiveness (Wishnie, Hackett, & Cassem, 1971). In addition, many wives express fears of precipitating another MI either by quarreling with their husbands (Mayou et al., 1978a; Wishnie et al., 1971) or by resuming sexual relations (Papadopoulos, Larrimore, Cardin, & Shelley, 1980).

In spite of these conflicts, however, marital deterioration post-myocardial infarction is not an inevitable outcome. In a study by Mayou et al. (1978a), a number of couples reported an improvement in marital and family relations after the MI. A lasting revaluation of their relationship resulted from the experience. The predictive

factors for marital outcome post-infarction were premorbid marital quality and the occurrence of other major life events during the year (Mayou et al., 1978a).

Role changes and task reallocation are inevitable after an MI. Failure to adapt to these changes may result in family dysfunction (Bruhn, 1977). To maintain their marital relationship, the husband and wife must seek positive methods for coping with the stress of the husband's MI.

A family's ability to cope successfully with the problems created by heart disease is dependent on the resources available to it (Jacobson & Eichhorn, 1964). Family members, neighbors, friends, family goals and values, and adequate financial reserves are all valuable resources reported by families experiencing heart disease (Jacobson & Eichhorn, 1964). According to Croog, Lipson, and Levine (1972), the primary sources of support for patients post-MI were family and friendship networks. Institutional and agency services were seldom used during convalescence.

Finlayson (1976) has related the availability of resources to patient outcome in post-MI patients. In Finlayson's study, those families in which the wife reported fewer sources of network support and in which the support was primarily restricted to the marital couple's families of origin, experienced less favorable outcomes than those families with greater support resources.

In summary, researchers have demonstrated that a myocardial infarction is a significant and stressful event for both the patient

and the spouse. This experience necessitates changes in the marital relationship and may negatively affect marital functioning. Resources are important in enabling the family to cope with the changes which occur following an MI. Thus, adequacy of resources may be a significant factor in determining patient outcome.

There remains a need for research regarding the mediating effect of various resources on marital functioning post-myocardial infarction. Identification of a positive relationship between specific types of resources and marital functioning would enable health care professionals to better assist the husband and wife in developing strategies to cope effectively with the crisis of an MI.

Purpose of the Study

The purpose of this study is to describe the relationship of selected perceived resources and perceived marital functioning in the husband and wife post-myocardial infarction. Increased understanding of the relationship between resources and marital functioning after an MI will enhance nursing's ability to assist the marital couple in identifying, strengthening, and using their available resources. Nurses may then develop intervention strategies to improve the couple's use of their resources and increase the couple's level of marital functioning, thus enabling them to cope more effectively with the MI experience.

Statement of the Problem

The problem posed by this researcher is as follows: Is there a relationship between perceived social, cultural, religious, and medical

resources and perceived marital functioning in the husband and wife post-myocardial infarction?

Research Questions

1. Is there a relationship between the husband's perception of his resources (social, cultural, religious, and medical) and his perception of marital functioning after the MI?

2. Is there a relationship between the wife's perception of her husband's resources (social, cultural, religious, and medical) and her perception of marital functioning after the MI?

3. How do husbands' and wives' perceptions of the husband's resources and their perceptions of marital functioning compare after the husband's MI?

Definition of Concepts

For the purpose of this study, the concepts within the problem statement are defined as follows:

Husband and wife post-myocardial infarction: A male patient, between the ages of 35 and 69, who has been diagnosed and hospitalized with a heart attack within the past 12 months, and his spouse. Couples were married and living together at the time of the study.

Marital functioning: The way in which the patient and his spouse relate to one another across a number of parameters, including Adaptation, Partnership, Growth, Affection, and Resolve (APGAR), to maintain

their integrity as a nurturing unit (Smilkstein, 1978). Each of the APGAR dimensions is defined below:

1. Adaptation is the use of intra- and extrafamilial resources for problem solving when family equilibrium is stressed during a crisis.

2. Partnership is the sharing of decision-making and nurturing responsibilities by family members.

3. Growth is the physical and emotional maturation and self-fulfillment that is achieved by family members through mutual support and guidance.

4. Affection is the caring or loving relationship that exists among family members.

5. Resolve is the commitment to devote time to other members of the family for physical and emotional nurturing. It also usually involves a decision to share wealth and space (Smilkstein, 1978, p. 1232).

Resources: Those social, cultural, religious, and medical assets available to the patient and his spouse that serve the process of marital nurturing (Smilkstein, 1980). Marital resources are considered effective under the following circumstances:

1. Social interaction is evident among family members. Family members have well-balanced lines of communication within areas of extrafamilial social interaction such as friends, support groups, clubs, and other community organizations.

2. Cultural pride or satisfaction can be identified, especially in distinct ethnic groups.

3. Religion offers satisfying spiritual experiences as well as contacts with an extrafamilial support group.

4. Medical care is available through channels that are easily established and have previously been experienced satisfactorily (Smilkstein, 1978, p. 1237).

Perception: The personal, subjective way in which each individual views experiences; the process by which information is organized, interpreted, and transformed from sensory data and memory to give meaning to one's experiences (King, 1981).

Assumptions

The following assumptions were made regarding this study:

1. A myocardial infarction is a crisis situation in the family life cycle.

2. The experience of a myocardial infarction will require adjustment on the part of the patient and his spouse.

3. All marital dyads possess some inherent resources to enable them to cope with crises.

4. The experience of a myocardial infarction will affect the level of functioning of the marital couple.

5. The husband's and wife's perceived level of marital functioning can be measured.

6. The husband's and wife's perceptions of social, cultural, religious, and medical resources can be measured.

7. The instruments used in this study are sensitive enough to measure the variables accurately.

8. The study participants will respond honestly to the instruments measuring marital functioning and resources.

9. The husband and wife will not confer while completing the instruments.

Limitations

Limitations of the study include the following:

1. Measures of marital functioning for the sample population pre-myocardial infarction are not available.

2. This study does not control for other variables which could affect marital functioning, such as health status of the wife, other chronic health problems of the patient, severity of MI, occurrence of other major life events during the convalescent period, history of a previous MI or cardiac surgery, and post-MI complications such as congestive heart failure, angina, and pericarditis.

3. The measurement of marital functioning is subjective. Variation may occur in the husband's and wife's responses from day to day.

4. The resource instrument contains only one item for each of the cultural, religious, and medical dimensions and two items for the social dimension. Not all aspects of the couple's perception regarding those dimensions may be tapped.

5. The study uses a convenience sample whose responses may differ from those of a randomized sample.

6. Questionnaires were mailed to participants, allowing for potential conferring of the husband and wife while completing the instruments.

7. The length of time since the husband's MI is a potential confounding variable in this study. Husbands and wives may perceive

their marital functioning differently at 3, 6, 9, and 12 months post-MI, and results may differ across the trajectory.

8. The data used in this research were collected for a previous study (Kline & Warren, 1983). Sensitivity of the instruments to measure the variables may thus be decreased.

9. Clinical documentation of MI (alteration in electrocardiogram and elevation of serum enzymes) is not available for study participants as subjects were referred by their physicians. Subjects may have been admitted to the study who do not meet the clinical criteria for diagnosis of an MI.

Outline of the Chapters

This research study is organized into six chapters. Chapter I included the background and purposes of the study, the problem statement, research questions, definition of the concepts, and the assumptions and limitations of the study. The concepts of marital functioning, resources, the husband and wife post-myocardial infarction, and the post-MI period are delineated in Chapter II. The relationship among these concepts is explored, and a conceptual model for the post-MI couple proposed, based on the nursing theory of Imogene King. In Chapter III a review of literature pertinent to the research problem is provided. A description of the research methodology and design used in the study is included in Chapter IV. Study findings are presented in

Chapter V. In Chapter VI, the researcher provides a summary of the study, draws conclusions, and explores the implications of the findings for nursing practice, nursing education, and further nursing research.

CHAPTER II

THE CONCEPTUAL FRAMEWORK

Perceived resources and perceived marital functioning in the husband and wife post-myocardial infarction were the focus of this study. In this chapter, relevant theories and concepts are provided to delineate the research problem. The concepts pertinent to this study are perceived resources, perceived marital functioning, the husband and wife, and post-myocardial infarction. Each of these concepts is explicated and the relationships among them explored. Based on this relationship, a model will be constructed for the marital dyad post-myocardial infarction using the nursing theory of Imogene King (1981).

The Husband and Wife

The establishment of an intimate relationship with another human being is considered by researchers to be a primary developmental task of young adulthood (Duvall, 1977; Erickson, 1963; Gould, 1978; Newman & Newman, 1979). Erickson (1963) stated that young adults desire to commit themselves to partnerships with others and to abide by these commitments despite necessary sacrifices and compromises.

Marriage is one context in which work on intimacy and mature social relationships occurs (Newman & Newman, 1979). According to Duvall (1977), marriage itself is one of the developmental tasks of

young adults within the family life cycle. Thus within a larger framework, the marital dyad, consisting of a husband and wife, may be viewed as a subdivision of the family unit.

The family may be defined as a small social system in which individual members are related to one another by bonds of affection and loyalty. Families possess a sense of permanence, establishing households that persist over years and decades (Terkelson, 1980).

Smilkstein (1978) defined the family in the context of the health care system. A family is a psychosocial unit, consisting of the patient and one or more persons, in which the individuals have a commitment to nurture one another.

In this study the husband and wife are viewed as a family unit and defined as follows. The husband and wife are a psychosocial unit comprised of a male patient, who has experienced an MI, and his spouse. These individuals are related to one another by bonds of affection, loyalty, and permanence and are committed to nurturing one another.

Post-Myocardial Infarction

A myocardial infarction is most simply termed a "heart attack." An MI results from narrowing of one or more of the coronary arteries which supply oxygen and nutrients to the heart. When a portion of coronary artery becomes occluded, there is a cessation of blood flow to the myocardium. Contraction in the affected area ceases due to lack of oxygen, and tissue necrosis occurs. Anaerobic metabolism will be initiated in the infarcted area, resulting in lactic acid accumulation in the tissues and loss of potassium and creatine from the cells.

Enzymes, such as lactic dehydrogenase (LDH), will be released from the damaged cardiac muscle into the systemic circulation (Jones, Dunbar, & Jirovec, 1978).

Following the infarct, the myocardial tissue will undergo numerous changes. Collateral circulation will develop to provide the deprived area with an alternate source of oxygen and nutrients. The myocardial cells will not regenerate, however. Healing of the damaged tissue occurs by replacement of the necrotic cells with nonfunctional connective tissue. The formation of scar tissue begins within 6 to 10 days following completion of the infarct and continues for up to 6 weeks post-infarction (Jones et al., 1978).

During the acute phase, within 48 hours of admission to the hospital (Billing, Lindell, Sederholm, & Theorell, 1980), patients are at greatest risk for the development of complications such as congestive heart failure, cardiogenic shock, arrhythmias, rupture of the ventricular wall, and embolus formation (Jones et al., 1978). It is therefore typical for patients to spend several days in a coronary care unit. After their condition is stabilized, patients are transferred to a stepdown unit for an additional 6 to 10 days before discharge.

Current medical practice stresses early ambulation for patients with uncomplicated myocardial infarction (Winslow & Weber, 1980). A rehabilitation program is frequently initiated in the hospital, which includes a graded activity program, education regarding medications, diet and exercise, and discussion of risk factors (Devney, 1980;

Winslow & Weber, 1980). Stress testing is also typically completed before discharge.

The rehabilitation process continues after discharge. It is during the post-hospital convalescence that the patient must begin the process of resolution. The consequences of the MI must be dealt with, and the patient must begin to set goals for recovery and work to achieve them (Scalzi, 1973). Patients face adjustments in physical activities, social activities, and family relationships during convalescence (Mayou et al., 1978a). Psychological adjustments are also common. Depression (Hacket & Cassem, 1975), weakness, anxiety, insomnia, and ennui (Wishnie, Hackett, & Cassem, 1971) have all been reported following discharge.

According to Hackett and Cassem (1975), the period of post-hospital convalescence for the MI patient begins at discharge and ends when the point of maximum rehabilitation potential is reached in terms of family role, employment, and personal happiness. Similarly, Stern, Pascale, and Ackerman (1977) measured successful rehabilitation after an MI by the patient's return to work, sexual functioning, and the absence of anxiety and depression. A review of pertinent literature indicated that researchers have assessed patients and spouses during hospitalization and at varying intervals up to 1 year post-infarction to determine their degree of adjustment (Mayou et al., 1978a; Skelton & Dominion, 1973; Stern et al., 1977; Wishnie et al., 1971).

In this study, the concept post-myocardial infarction is defined as the period from hospital discharge following an MI to 1 year post-infarction.

Resources

A family's resources have been viewed by researchers as a valuable mediator of life stress (Hill, 1958; McCubbin, 1979; McCubbin & Patterson, 1983; Pearlin & Schooler, 1978). Such resources are seen as serving a dual function for families: buffering the negative consequences of stressors on family life and facilitating family adjustments given a crisis situation (McCubbin, Joy, Cauble, et al., 1980). In spite of an agreement on the importance of resources for families, however, there is confusion in terms of how resources should be defined.

Hill (1958) was one of the earliest theorists to identify family resources as an important factor in helping families cope with crises. He defined family resources as the characteristics within the family organization that, by their presence or absence, will either prevent a crisis or lead the family into one. According to Hill, resources are primarily internal; i.e., they "lie within the family itself and must be seen in terms of the family's structure and values" (p. 14).

Internal resources were also the central focus of Olson, Sprenkle, and Russell's (1979) Circumplex Model of Marital and Family Systems. Olson et al. delineated two dimensions, adaptability and cohesion, which describe family members' manner of relating to one another. Cohesion is the emotional bonding and degree of individual autonomy of

family members. Adaptability is the family's ability to respond to stress by changing its role relationships, power structure, and relationship rules. According to Olson et al., families in which cohesion and adaptability are balanced tend to function more adequately than families in which there are extremes of these dimensions. The degree of cohesion and adaptability within a given family is fluid, however, and will change as families are faced with and adapt to stress.

Integration and cohesion were also identified by McCubbin (1979) as valuable internal resources enabling the family to withstand social and psychological stressors. In addition, McCubbin argued that a second set of resources is important to ensure the family's adaptation in a crisis, i.e., the development of a set of coping behaviors aimed at strengthening the family's functioning, reducing the sources of stress, and securing external supports.

In contrast to McCubbin (1979), Pearlin and Schooler (1978) viewed resources and coping behaviors as distinct categories. These authors clearly differentiated between resources (those things that are available to individuals in developing their coping repertoires) and the specific coping responses (what individuals actually do to mediate the sources of stress). According to Pearlin and Schooler, there are two types of resources of importance in enabling an individual to respond positively to life stressors: social resources and psychological resources.

Psychological resources reside within the personality and can be drawn upon by the individual in times of need. These responses include

self-esteem (the positive attitude one holds about oneself), self-denigration (the extent to which one holds negative feelings about oneself), and mastery (one's belief in one's ability to control one's own life (Pearlin & Schooler, 1978).

Social resources, on the other hand, are the interpersonal networks of which the individual is a part, such as extended family, friends, neighbors, and the work group (Pearlin & Schooler, 1978). These social networks are external to the family unit itself, but are a potential source of support in times of crisis.

The importance of social networks as a resource for families facing crises was also documented by Finlayson (1976). Finlayson described social networks as those persons perceived by wives as lay helpers and consultants during the crisis of their husbands' hospitalization and afterward. Finlayson's study indicated that strong and varied social support is positively related to favorable outcome post-myocardial infarction.

From the above discussion, two categories of family resources can be identified, internal and external. Internal resources lie within the family unit itself and encompass characteristics of the family's structure, values, and manner of interacting with one another as well as the individual assets of family members. External resources lie outside the family unit, encompassing social networks such as relatives, friends, neighbors, and the larger community. Both internal and external resources are of value in assisting families to adapt in a crisis situation.

The majority of the studies discussed above focused either on internal resources (Hill, 1958; Olson et al., 1979; McCubbin, 1979) or external resources (Finlayson, 1976). Their applicability to a study of family resources is therefore limited. Pearlin and Schooler's study (1978), while encompassing both categories, was directed to the individual rather than the family. It is thus inappropriate for the purpose of this study.

A framework for assessing family resources which encompasses both the internal and external dimensions was developed by Smilkstein (1978). According to Smilkstein, family resources are those "assets that serve the process of family nurturing" (p. 226). Family resources include social, cultural, religious, economic, educational, and medical assets. These are designated by the acronym SCREEM (Smilkstein, 1978).

Smilkstein (1980) stated that when stressful events occur, the family maintains its equilibrium by use of family resources to meet the needs of its members. Assessment of a family's SCREEM resources aids in ascertaining whether or not these resources are adequate to enable the family to cope with a crisis situation (Smilkstein, 1978).

Smilkstein (1980) considered family resources to be effective under the following circumstances:

1. Social interaction is evident among family members. Family members have well-balanced lines of communication within areas of extrafamilial social interaction such as friends, support groups, clubs, and other community organizations.
2. Cultural pride or satisfaction can be identified, especially in distinct ethnic groups.

3. Religion offers satisfying spiritual experiences as well as contacts with an extrafamilial support group.

4. Economic stability is sufficient to provide both reasonable satisfaction with financial status and an ability to meet the economic demands of normal life events.

5. Education of family members is adequate to allow members to solve or comprehend most of the problems that arise within the format of the life-style established by the family.

6. Medical care is available through channels that are easily established and have previously been experienced satisfactorily. (p. 1236)

For the purpose of this study, resources will be defined using four of Smilkstein's six dimensions: social, cultural, religious, and medical. Use of these four categories allows assessment of both internal (social, cultural, religious) and external (social, religious, medical) resources. The clarity of Smilkstein's definition of each resource category enhances their operationalization for use in the research setting. Resources, then, are the social, cultural, religious, and medical assets that the husband and wife perceive they have available to draw on in times of need.

Marital Functioning

Marital functioning, as a concept, has not been delineated in the literature to date. Other dimensions have been used by researchers, however, to describe the relationship of the marital couple. These include "satisfaction" (Snyder, 1979), "quality" (Lewis & Spanier, 1979), "vitality" (Ammons & Stinnett, 1980), and "adjustment" (Spanier, 1976). All of these descriptors represent multidimensional concepts which attempt to delineate the marital relationship qualitatively.

Ammons and Stinnett (1980) defined the marital relationship in terms of its vitality. Their Vital-Total Marital Relationship Scale is designed to measure marital partners' degree of emotional involvement, the satisfaction they derive from their relationship, the extent to which they do things together, and the degree of enjoyment they derive from living their lives together. According to Ammons and Stinnett, marital vitality is dependent on a couple's balance of mutuality and individuation. Vital marriages are characterized by reciprocity, determination, commitment, and well-developed ego strength in both partners.

Similar dimensions to describe the marital relationship were developed by Snyder (1979). Snyder used the term "satisfaction" to describe such areas as communication, time together, role orientation, and reported dissatisfaction with sexual activity and children. Communication and the quality and amount of a couple's time together were found by Snyder to be the best predictors of marital satisfaction.

Spanier (1976) discussed the marital relationship in terms of the dyad's adjustment. Dyadic adjustment is a dynamic process, the outcome of which is a result of a couple's expressed degree of dyadic satisfaction, dyadic cohesion, dyadic consensus, and affectional expression. According to Spanier, dyadic adjustment may be viewed as a continuum. A couple will move back and forth along the continuum from good adjustment to poor adjustment as they interact and are influenced by life experiences.

Each of the concepts described above provides a multidimensional, qualitative measure of the marital relationship. The dimensions measured are similar despite differences in terminology. It is not possible to differentiate the concepts of satisfaction (Snyder, 1979), adjustment (Spanier, 1976), and vitality (Ammons & Stinnett, 1980) based on the researchers' descriptions. In addition, insofar as all of these concepts delineate to some degree how the marital couple functions as a unit, the concepts could also be termed marital functioning.

An additional concept relevant to marital functioning is that of family functioning. Family functioning has been described by a number of researchers including Barnhill (1979), Pless and Satterwhite (1973), and Smilkstein (1978). The work of each of these authors is discussed below.

Barnhill (1979) identified eight basic dimensions of healthy family functioning which are interrelated and form an interlocking, mutually causal system. These eight dimensions are subcategories of four family themes: identity processes, change, information processing, and role structuring. Assessment of functioning in each of the eight areas determines the family's degree of health in terms of how members relate to one another within the family unit. According to Barnhill, this model has implications for assessment of family functioning, for intervention to strengthen areas of deficit, for training of family therapists, and for family education to prevent family dysfunction. In spite of the comprehensiveness of Barnhill's model, however, it has limited applicability in research or practice at

present as the eight dimensions have not been operationalized. It is thus inappropriate for the purpose of this study.

Pless and Satterwhite (1973) defined family functioning as "the dynamics of everyday life: the way in which the family, as a unit, operates across many dimensions" (p. 619). They developed a Family Functioning Index (1973) designed to assess the family holistically in terms of life style and strength of family relationships. The Index consists of 15 items which assess the areas of communication, marital satisfaction, problem solving, frequency of disagreements, and feelings of happiness and closeness. Pless and Satterwhite developed the instrument in the research setting and adapted it for administration by physicians in the practice setting.

A similar, but shorter, instrument to assess family functioning was developed by Smilkstein (1978). His family APGAR (1978) was designed as a five-item screening tool to assess the family's functioning in areas of adaptation, partnership, growth, affection, and resolve. Smilkstein compared family functioning to an organ system in the body. Each organ has its own unique function, but all are interrelated. He saw the family in health as a nurturing unit striving to maintain the integrity of its component parts. The five components of the family APGAR were defined as follows:

1. Adaptation is the utilization of inter- and extrafamilial resources for problem solving when family equilibrium is stressed during a crisis.

2. Partnership is the sharing of decision making and nurturing responsibilities by family members.

3. Growth is the physical and emotional maturation and self-fulfillment that is achieved by family members through mutual support and guidance.

4. Affection is the caring or loving relationship that exists among family members.

5. Resolve is the commitment to devote time to other members of the family for physical and emotional nurturing. It also usually involves a decision to share wealth and space. (p. 1232)

Smilkstein's conceptualization of family functioning is particularly apropos to this research for the following reasons. The dimensions proposed by Smilkstein are qualitative, distinct, and clearly defined to enable them to be operationalized for use in the research setting. In addition, the components are as appropriate to describe marital functioning as they are to describe family functioning. Finally, the dimensions address the areas of growth and adaptation which are particularly important for a couple facing the crisis of a myocardial infarction.

For the purpose of this study, then, marital functioning is defined as conceptualized by Smilkstein (1978). Marital functioning is the manner in which the husband and wife operate in the areas of adaptation, partnership, growth, affection, and resolve to maintain their functional integrity as a nurturing unit. The level of marital functioning is reflective of how the individual partners perceive they relate to, and communicate with, one another within the boundaries of the marital unit.

The Relationship of Resources and Marital Functioning in the Husband and Wife Post-Myocardial Infarction

To comprehend the relationship between resources and marital functioning proposed in this study, an understanding of crisis theory is necessary. Hill (1958) proposed an ABCX Model to study how families react to stressful life events. The proposed formula is as follows: A (the event) --- interacting with B (the family's crisis-meeting resources) --- interacting with C (the definition the family makes of the event) --- produces X (the crisis). Thus, a stressful event, such as an MI, will interact with the marital couple's available resources and with their perception of the MI to determine whether or not the experience will precipitate a crisis for them.

According to Hill, one can chart family adjustment to a crisis situation using a roller-coaster model. (See Figure 2.1.) Facing a crisis will lead the family into a period of disorganization. This will be followed by recovery and eventual reorganization as the family uses its resources to cope with the situation.

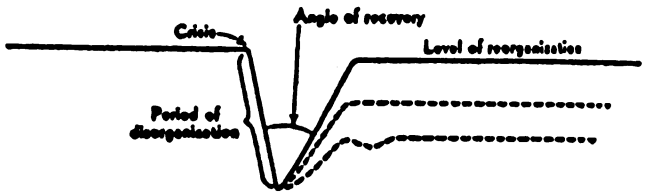

Figure 2.1.--Roller-coaster model of family adjustment. (From Hill, 1958, p. 146.)

Smilkstein (1980) incorporated concepts from Hill's framework into a model that illustrates family response to stressful life events such as a myocardial infarction. This Cycle of Family Function demonstrates the positive relationship between marital resources and marital functioning proposed in this study. The model is shown in Figure 2.2.

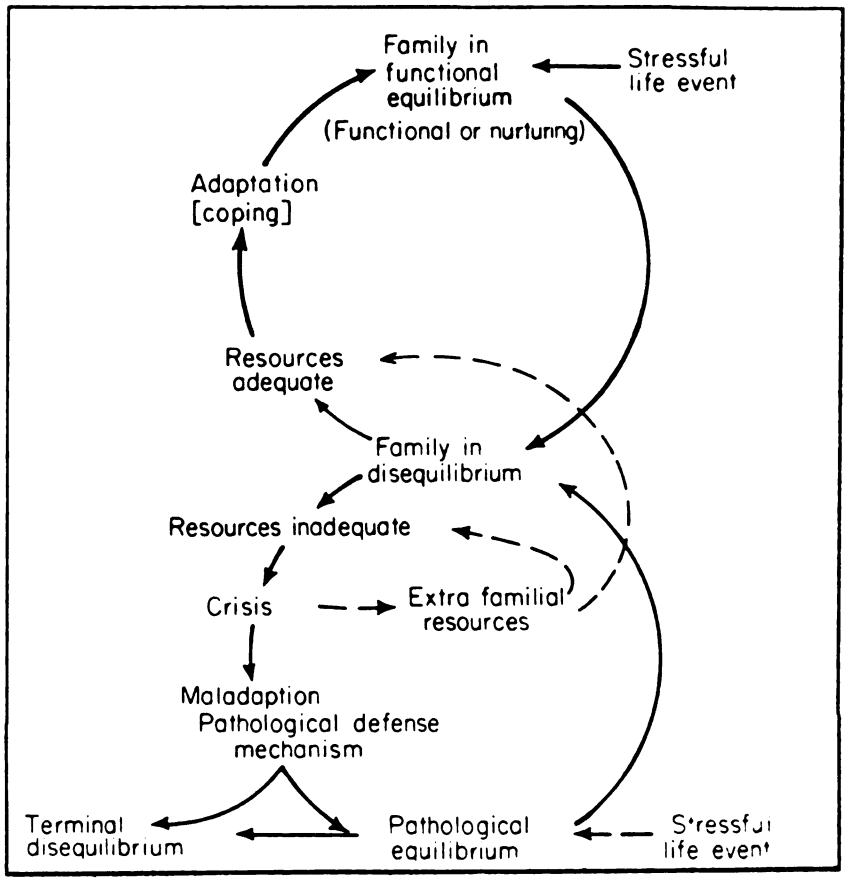

Figure 2.2.--The Cycle of Family Function: A model for family response to stressful life events. (From Smilkstein, 1980, p. 227.)

According to Smilkstein, a nurturing family maintains its equilibrium on a daily basis by using its resources to meet the needs of family members. When faced with a stressful life event, however, the family experiences a measure of disequilibrium that requires a special coping response and tests the available family resources. Disequilibrium results in impairment of functioning, nurturing, or role complimentarity within the family. The family is thus unable to escape or solve problems using their customary methods of problem solving (Smilkstein, 1980). If the family possesses adequate resources (social, cultural, religious, economic, educational, and medical), however, it will ultimately be able to cope or adapt. Adaptation occurs as family members use their resources to resolve the stressful situation. The functional equilibrium of the family unit will thus be restored (Smilkstein, 1980).

On the other hand, a family faced with a stressful life event may find their resources to be inadequate, which may precipitate a crisis for the family (Smilkstein, 1980). In the crisis state the family is in disequilibrium due to lack of resources to assist in coping (Smilkstein, 1980). The family must be assisted to strengthen available resources, as well as to identify extrafamilial resources. Strengthening of family resources will strengthen the family's functioning and enable the family to regain its integrity as a nurturing unit.

All families will ultimately find some way of coping with stressful life events. If adaptation does not return the family to functional equilibrium, it will adopt pathological defense mechanisms

such as avoidance, denial, and somatization in order to cope. These defense mechanisms allow the family to escape from the anxiety of the unresolved crisis but may lead to a state of pathological equilibrium in which family members' ability to interact with and nurture one another is impaired (Smilkstein, 1980). For some families unresolved crises, pathological defense mechanisms, and impaired nurturing will result in terminal disequilibrium and family disintegration. It is therefore crucial for health care professionals to assist families in identifying and using resources to strengthen their integrity as nurturing units at all stages in the Cycle of Family Function.

A myocardial infarction is a stressful life event for both the husband and wife. An MI has the potential for disrupting the functioning of the marital couple and moving them into a period of disequilibrium. As the couple seeks to cope with the MI experience, they will use their available social, cultural, religious, and medical resources. Use of resources will restore the husband and wife to functional equilibrium. Couples who lack adequate resources to aid them in coping are at risk for the development of pathological defense mechanisms. For these couples, inadequate resources, given the MI experience, result in a lower level of marital functioning.

Application of the Concepts to Nursing Theory

Imogene King (1981) formulated a theory for nursing based on a systems model. This theory provides a framework for application of the concepts of perceived resources and perceived marital functioning in the husband and wife post-myocardial infarction proposed in this study.

The focus of King's conceptual framework is the individual interacting with other individuals and with the environment. Man is perceived as a social being who is rational and sentient. He is a reacting being capable of choosing between alternatives, setting goals, making decisions, and participating actively in the nursing process.

According to King, individuals react to persons, events, and objects in terms of their perceptions. Perception is an individual's unique and personal manner of viewing the world; it is the process by which information is organized, interpreted, and transformed to give meaning to one's experiences. An individual's perceptions are influenced by past experiences, values, needs, and one's role and status both within the family and society.

Individuals possess unique concepts of self- and body-image which are also influenced by life experiences and will change as the individuals grow and develop over time. Self-concept is the sum total of the individual as he/she is known to him/herself (Jersild, in King, 1981). The concepts of self- and body-image are related. Illness, trauma, and other life-threatening experiences will alter a person's self-concept and body-image. Assistance from health care personnel may then be required by the individual in order to cope with the changes experienced.

Nursing's responsibility is to provide this needed assistance for clients. According to King (1981), the goal of nursing "is to help individuals maintain their health so they can function in their roles" (pp. 3-4). Nursing accomplishes this aim through nurse-client

interactions. In this process the nurse and the client share information regarding their perceptions, identify specific areas of concern, and explore means to achieve an agreed-upon goal (King, 1981). A schematic diagram of the process of goal attainment is shown in Figure 2.3.

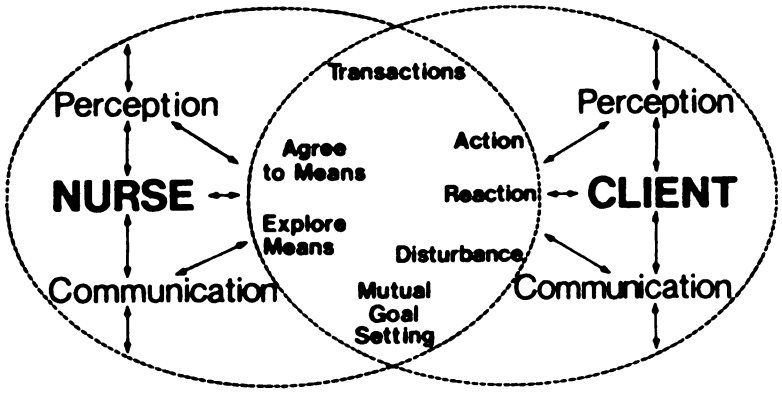

Figure 2.3.--Schematic diagram of the process of goal attainment. (From King, 1981, p. 157.)

King (1981) stated that goal attainment is the focus of all nurse-client interactions. To understand the theory of goal attainment, knowledge of the concepts pertinent to the theory is necessary. These concepts include interaction, perception, communication, and transaction.

Interaction is the interpersonal process in which individuals communicate their perceptions to one another. The communication may be

verbal or nonverbal, but will be goal-directed. Individuals interact based on their past experiences, expectations, knowledge, needs, and goals. When the nurse and client interact, they perceive one another, the situation, make judgments, and make decisions to act (King, 1981).

A key element in the concept of interaction is perception. Perception is each individual's unique manner of viewing the world, a composite of one's experiences, background, biological inheritance, and self-concept (King, 1981). Perception gives meaning to one's experiences, influences one's behavior, and determines one's image of reality. Clients entering the health care system may have their perceptions distorted by illness, anxiety, anger, or stress. The nurse must therefore assess the accuracy of the client's perception as well as her/his own perception of the situation. Perceptual accuracy is vital if mutual goal setting is to occur (King, 1981).

If perceptual accuracy is attained, transaction will result between the client and the nurse. Transactions are observable behaviors of human beings in interaction with their environments. In the nursing process, transaction involves an exchange of values by the nurse and the client to identify commonalities and thereby to set mutual goals. Transaction thus results in goal attainment and an increased level of health for the client.

Based on King's (1981) conceptual framework, a model was constructed for the husband and wife post-myocardial infarction that integrates the concepts of perceived resources and perceived marital functioning. (See Figure 2.4.) The model is discussed below.

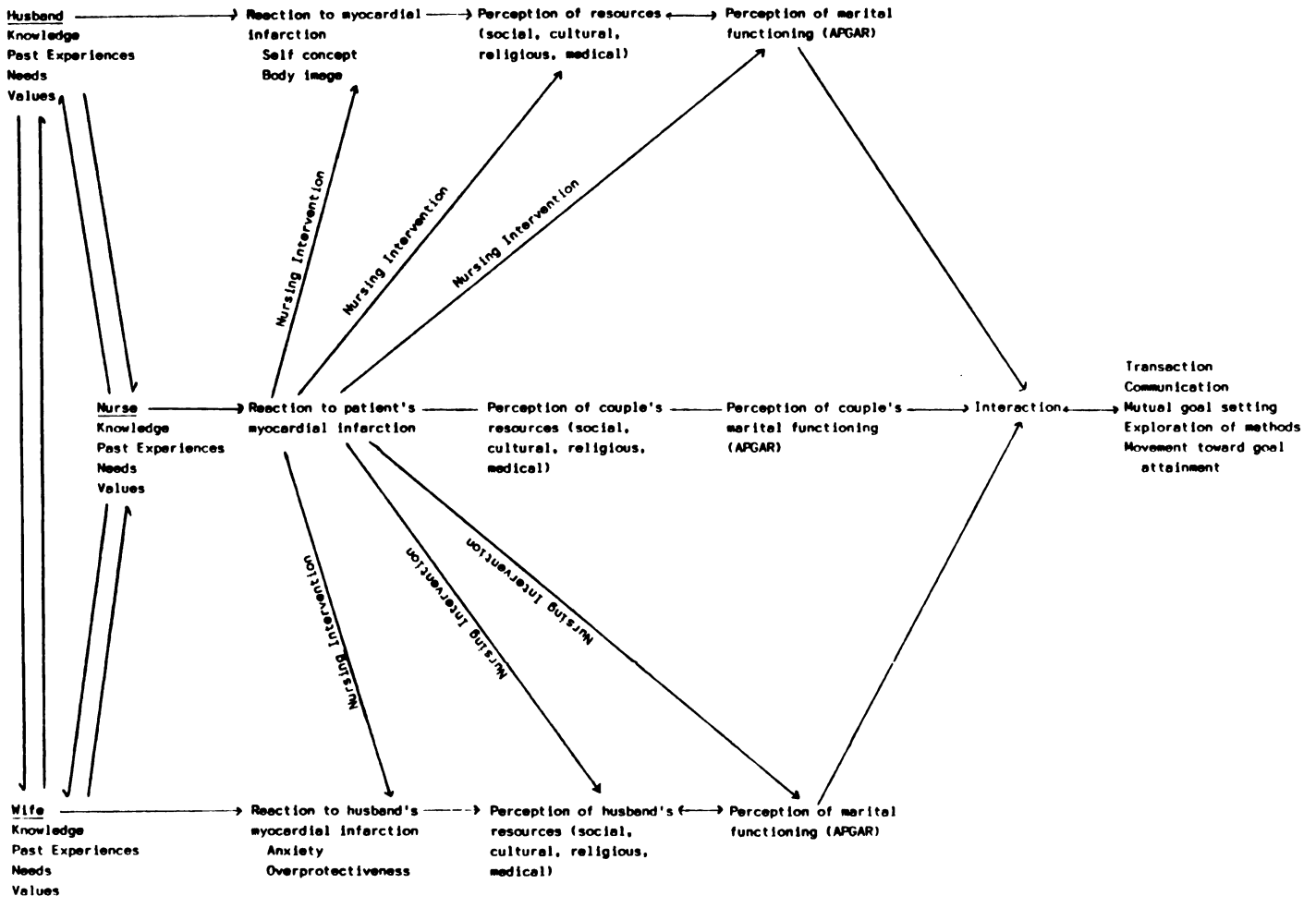

Figure 2.4: Nursing Intervention Model for the Husband and Wife Post-Myocardial Infarction. (Adapted from King, 1981; modified from Kline & Warren, 1982.)

Explication of the Model for the Husband and Wife Post-Myocardial Infarction

The MI patient, his wife, and the nurse are all unique human beings. Each of them reacts to, and interacts with, other individuals and the environment based on their perceptions of the world around them. Their perceptions of events are influenced by their particular blend of knowledge, past experiences, values, and needs. As a result, the husband, the wife, and the nurse will react differently to the husband's myocardial infarction.

Reactions of the husband to his MI may include anxiety, denial, anger, and depression. The experience of a life-threatening illness, and the necessary role changes precipitated by it, may alter the husband's self-concept and body-image. He may thus view himself differently and find it difficult to cope with the life-style changes necessitated by his illness. The husband may also perceive differences in his wife's reactions to him since his infarct, which may negatively affect the couple's marital functioning.

The wife may experience anxiety regarding her husband's condition. She may react by becoming overprotective and encouraging her husband to be dependent. Responsibilities may increase for the wife as she adopts roles that have traditionally been the domain of her husband.

The clinical nurse specialist must assess the husband's and wife's individual reactions to the MI. Using the nursing process, data will be obtained regarding the partners' knowledge, past experiences, values, and needs. The clinical specialist will assess the husband's self-concept and body-image and the wife's level of anxiety concerning

her husband's MI. Based on this information, nursing diagnoses will be formulated to describe areas of strength and deficit in the couple's ability to cope with the husband's illness. Nursing actions will be directed at improving the husband's self-concept and body-image, decreasing the wife's anxiety and overprotectiveness, enhancing the couple's awareness of their individual reactions to the MI experience, facilitating communication of their reactions to one another and health care personnel, and clarifying the couple's distorted perceptions regarding the MI.

The husband's and wife's reactions to the husband's MI will also affect their perception of available social, cultural, religious, and medical resources. Anxiety and other emotional states, which are common after an MI, may distort the partners' perceptions of these resources and thus hinder their ability to use the resources effectively in the coping process. If resources are lacking or ineffectively used, the couple's marital functioning may be negatively affected, and their ability to nurture one another may be impaired. Nursing interventions directed at perception of resources and perception of marital functioning are therefore vital.

Initially, the husband and wife must be assisted to accurately assess the resources available to them. This should include an exploration of the social networks available to help and support them, the cultural and religious heritage and world views that are significant in their lives, and their understanding of and ability to gain access to the health care system when needed. Specific nursing

interventions will then be implemented to use existing resources more fully, strengthen resources that are weak, and establish new lines of support for the couple.

Interventions aimed at enhancing the marital couple's resources may increase the couple's level of marital functioning and aid in the process of adaptation after an MI. In addition, insofar as the husband and wife may experience conflict in their relationship due to the stress of the MI, specific nursing interventions may need to be directed at the couple's marital functioning. An assessment of each dimension of the couple's APGAR (Smilkstein, 1978) may be completed to identify strengths, weaknesses, and differences in the husband's and wife's perceptions of marital functioning. The clinical nurse specialist will then be able to assist the couple to communicate their individual perceptions of their relationship to one another.

Perception and communication are essential components of the processes of interaction and transaction. Distorted perceptions of resources or marital functioning, ineffective communication between the partners, or dysfunctional reactions to the MI on the part of the husband or wife will hinder the processes of interaction, transaction, and ultimately goal attainment. Perceptual accuracy on the part of all participants is therefore vital if successful adjustment is to occur after an MI.

The husband and wife post-myocardial infarction are active participants in health care decisions. The focus of the nurse-client interaction with the marital dyad is goal attainment: ensuring

accurate perception of available resources to assure healthy perception of marital functioning post-MI so that the functional equilibrium of the couple may be restored.

Goal attainment will occur as the husband, the wife, and the nurse share perceptions, exchange values to identify commonalities, and set mutual goals. The marital couple and the nurse will share their individual values and perceptions regarding the MI, their social, cultural, religious, and medical resources, and their level of marital functioning. Finally, appropriate action will be taken to identify available resources and to enhance their use, thus strengthening the marital couple's functional integrity as a nurturing unit.

Summary

In this chapter each of the concepts pertinent to the study was delineated and the relationship among them explored. The theory of Imogene King (1981) was used as a basis for application of the concepts to nursing science. A conceptual model was constructed for the husband and wife post-myocardial infarction to depict the relationship between perceived resources and perceived marital functioning as it is proposed by this researcher.

A review of current literature pertinent to social, cultural, religious, and medical resources, and marital functioning for the husband and wife post-myocardial infarction will be provided in Chapter III. The strengths and weaknesses of previous research will be described to establish the relevance of and need for this study.

CHAPTER III

REVIEW OF THE LITERATURE

In this study, the relationship of selected perceived resources and perceived marital functioning in the husband and wife post-myocardial infarction was explored. The purpose of the literature review is to document current research findings on the marital relationship and the psychosocial aspects of a myocardial infarction in order to establish the rationale for this research. To accomplish this purpose, the researcher will focus on the following areas: (a) pertinent instruments to measure marital functioning and closely related concepts, (b) resources used by the husband and wife post-myocardial infarction, and (c) the effect of an MI on the marital relationship.

Instruments to Measure Marital Functioning and Closely Related Concepts

A number of researchers have developed instruments to assess multidimensionally the marital relationship (Ammons & Stinnett, 1980; Barnhill, 1979; Epstein, et al., 1978; Pless & Satterwhite, 1973; Smilkstein, 1978; Snyder, 1979; Spanier, 1976). "Satisfaction" (Snyder, 1979), "quality" (Lewis & Spanier, 1979), "vitality" (Ammons & Stinnett, 1980), "functioning" (Pless & Satterwhite, 1973), and "adjustment" (Spanier, 1976) are terms that have been used to delineate

the dyad's manner of relating to one another. In spite of differences in terminology, however, each of the researchers has attempted to measure the interaction of the marital couple qualitatively.

Snyder (1979) formulated a Marital Satisfaction Inventory (MSI), consisting of 280 items, that assesses areas such as communication, time together, role orientation, and reported dissatisfaction with sexual activity and children. The MSI consists of 11 scales: one global affective scale, one validity scale, and nine additional scales which focus on specific areas of marital interactions. In the process of tool development, Snyder administered the instrument to two differing populations, involving a total of 150 couples selected at large and 40 couples currently in marital therapy. Snyder reported that a high degree of internal consistency within the 11 scales, as well as adequate distinction between the scales, was revealed by item and factor analyses, but statistics were not provided to confirm this. Couples' scores on the MSI scales correlated highly with their scores on the Locke-Wallace Marital Adjustment Test and also a therapy criterion, thus giving evidence of the Inventory's construct and criterion validity. Correlational analysis indicated that measures of affective and problem-solving communication were consistently the best single predictors of global marital satisfaction. The author concluded that the Marital Satisfaction Inventory has indications for clinical practice and for further research.

A shorter instrument to measure marital satisfaction was conceived by Ammons and Stinnett (1980). The Vital-Total Marital Relationship

Scale consists of seven statements designed to measure the following areas: (a) the degree of satisfaction the couple derives from their relationship, (b) the couple's degree of emotional involvement, (c) the degree to which the couple does things together, and (d) the degree to which the couple enjoys living their lives together. Ammons and Stinnett administered their scale to a volunteer sample of rural, middle-aged, middle-class individuals who had been designated as members of "strong families." Only those individuals scoring at least 25, out of a possible 35 points, on the scale were included in the final data analysis (N = 48). The split-half reliability coefficient of the scale was .83. An item analysis using chi-square statistics demonstrated that each item was able to significantly discriminate between the upper and lower quartiles of the sample ($p < .0001$). Due to the small, homogeneous sample used in this study, however, the reliability and validity of the scale, as well as the generalizability of the findings, are questionable. Further research is needed with larger and more heterogeneous samples to validate the findings of the study.

Spanier (1976) developed a 32-item dyadic adjustment scale to assess the relationship of marital and cohabiting dyads. The instrument consists of four subscales which measure dyadic satisfaction, dyadic cohesion, dyadic consensus, and affectional expression. The Dyadic Adjustment Scale was tested for reliability and validity using a sample of married (N = 218) and divorced (N = 94) persons living in one county in Pennsylvania. Total scale reliability using Cronbach's alpha was .96. Measures of content, criterion, and construct validity were

also reported. Spanier concluded that the scale was a reliable and valid measure of dyadic adjustment which represented a significant improvement over previous measures of the same construct. Further research is needed, however, with different populations to validate the utility of the tool for both clinical practice and research. In addition, Spanier recommended that future researchers might focus on the broader concept of marital functioning, which would include dimensions of both marital adjustment and marital quality.

The concept "marital functioning" has not been delineated in the literature to date. Family functioning has been described, however, and a number of researchers have developed instruments or models to attempt to measure this construct conceptually (Barnhill, 1979; Dhooper, 1983; Epstein et al., 1978; Moos & Moos, 1976; Olson et al., 1978; Pless & Satterwhite, 1973; Roberts & Feetham, 1982; Smilkstein, 1978).

Barnhill (1978) formulated a theoretical model titled the "Family Health Cycle." The cycle consists of eight dimensions which can be grouped into four basic family themes: (a) identity processes, (b) coping with change, (c) information processing, and (d) role structuring. The eight dimensions are interrelated and "can be integrated into an interlocking, mutually causal system" (Barnhill, 1978, p. 96). An improvement in one or more of the family functioning dimensions should thus result in an improvement in other dimensions. Barnhill proposed that the model has implications for clinical practice, training of family therapists, and family life education. It was suggested

that families could be rated by therapists on the various dimensions and interventions formulated based on the findings. For research purposes, however, a rating system remains impractical and subjective. Instruments to test Barnhill's model empirically have not been found in the literature to date.

A more complex model for assessing family functioning was developed by Epstein et al. (1978). The McMaster Model of Family Functioning (MMFF) is based on a systems approach and consists of six dimensions: (a) problem solving, (b) communication, (c) roles, (d) affective responsiveness, (e) affective involvement, and (f) behavior control. According to Epstein et al., the model was formulated based on a Judeo-Christian value set in order to account for the cultural differences which influence family functioning. The authors stated that the Model has utility for family therapy and the training of family therapists. For research purposes or for use by other health care professionals, however, the model is too complex to be of value.

To increase the practicality of the McMaster Model of Family Functioning, Epstein, Baldwin, and Bishop (1983) developed the McMaster Family Assessment Device (FAD), a 53-item screening instrument, based on the Model. The FAD consists of seven scales, a general functioning scale which assesses the family's overall health/pathology and six additional scales based on the six dimensions of the MMFF. Tests of reliability were completed on the FAD using a total sample of 503 individuals (194 individuals from a group of 42 families and an additional 209 from students in an introductory psychology class).

Coefficient alphas for the seven scales ranged from .74 to .92, with intercorrelations between the scales ranging from .4 to .6. The authors argued that the high scale intercorrelations are indicative of the fact that various aspects of family functioning are not totally independent of each other. Further, they contended that the seven scales are sufficiently independent as to be distinguishable. Tests of criterion, concurrent, and predictive validity using the FAD indicated that the instrument is a valid measure of family functioning. The McMaster FAD provides the most detailed tool available to date for assessing family functioning and has applicability for both research and clinical practice. Further research using the FAD is warranted to determine the effectiveness of the tool for assessing family functioning in families experiencing a sudden, severe illness such as an MI.

In addition to the McMaster Family Assessment Device, four instruments were found by the investigator that measure the concept of family functioning empirically: the Family Functioning Index (Pless & Satterwhite, 1973), the Family APGAR (Smilkstein, 1978), the Family Adaptability and Cohesion Evaluation Scales (Olson, Bell, & Portner, 1979), and the Family Environment Scale (Moos & Moos, 1976). All of these instruments provide a means of assessing the family's level of functioning multidimensionally. Each of them is discussed below.

The Family Functioning Index (FFI) developed by Pless and Satterwhite (1973) consists of five categories: "communication," "togetherness," "closeness," "decision-making," and "child orientation." To test the Index for construct and criterion validity,

Pless and Satterwhite administered the FFI to several differing samples. The FFI scores of husbands and wives participating in two counseling programs (N = 82 and N = 65) were found to correlate moderately with ratings of the families by counselors. The authors also administered the Index to the parents of 399 school-aged children, a 1% random sample of families in Monroe County, New York. Two hundred nine of these children had some type of chronic disorder; the remainder were normal. A comparison showed the mean Index scores of the agency sample were significantly lower than those of the random sample. Reliability of the Index was indicated by a correlation of 0.72 between the FFI scores of the husbands and wives obtained independently. Tests of internal consistency were not conducted on this sample, however, so the reliability of the tool is incompletely established.

In a later study, Satterwhite, Zweig, Iker, and Pless (1976) examined the test-retest reliability of the Family Functioning Index over a 5-year period. The authors administered the instrument to families of 399 children, 209 of whom had a chronic illness. Five years after the original interview, 29 families of the chronically ill children completed the Index a second time. A significant correlation was discovered between the original and retest scores on the FFI. Satterwhite et al. (1976) thus concluded that family functioning may remain stable over time and that the FFI appears to have adequate test-retest reliability. While test-retest reliability indicates the tool's stability over time, it does not indicate whether or not the five subscales are internally consistent. The authors did not report tests

of internal or external consistency which would strengthen the instrument's reliability.

The Family Functioning Index (Pless & Satterwhite, 1973) was also used to assess family functioning in a sample of married patients (N = 46) with chronic stable angina (Brown, Rawlinson, & Hardin, 1982). In this study, the authors explored the relationship between family functioning and health status 9 months after the initiation of medical treatment or coronary bypass surgery. The FFI was administered only to the patients, and the child-orientation scale was deleted as most of the subjects did not have minor children. To determine the reliability of the altered Index, a correlation of the total scores with the subscale scores was completed. Correlation coefficients ranged from .37 to .81, and all were statistically significant ($p < .01$). The mean score of subjects on the FFI was 17.2, out of a possible 24, indicating that, on the average, subjects saw their families as functioning moderately well. The onset of illness had not resulted in major changes in functioning for most families. Further, health status was not significantly correlated to level of family functioning for any of the variables except anxiety. Subjects' extent of anxiety was found to be negatively correlated (-.30) with family functioning. Brown et al. concluded that the lack of significant findings in the study might be related to the homogeneity of the sample, reliance on retrospective data to assess family functioning prior to illness, and/or lack of data regarding family functioning from patients' spouses. Further, the fact that all patients had a stable chronic disease of at least 9 months'

duration may have negated the effect of health status on marital functioning. Different results might have been obtained from patients experiencing a sudden, severe illness such as a myocardial infarction.

Olson, Bell, and Portner (1978) developed the Family Adaptability and Cohesion Evaluation Scales (FACES) to provide a self-report measure of individual family members' perceptions of the unit's functioning in the areas of cohesion and adaptability. The FACES, which is based on the Circumplex Model of Marital and Family Systems (Olson et al., 1979), consists of a total of 111 items developed to tap each of 7 concepts related to adaptability, 9 related to cohesion, and 15 items from Edmond's Social Desirability Scale. Two items were selected for the high, moderate, and low levels of each concept. Construct validity was demonstrated by factor analysis, while clinical validity was established by counselor agreement regarding the levels assigned to individual items. Using the FACES, data were collected from 201 families consisting of a father, mother, and adolescent child (total N = 603) to test the instrument for reliability. Fifty-three of the families were currently in counseling, 31 had a runaway adolescent, and the final 117 were nonproblem families who served as a control group. Coefficient alphas of r = .75 and r = .83 were computed for the adaptability and cohesion subscales, respectively. The authors concluded that the FACES appears to be a reliable and valid tool for assessing family functioning in the areas of adaptability and cohesion. Further, as adaptability and cohesion are pertinent dimensions in families experiencing

severe illness, the instrument may be effective in assessing family functioning in MI patients.

The Family Environment Scale (FES) (Moos & Moos, 1976) consists of 90 true-false items which assess the social environment of families along three dimensions: (a) interpersonal relationships, (b) personal growth and development, and (c) system maintenance. Within the three dimensions, there are ten subscales with alphas ranging from .68 to .86. Average intercorrelations between the subscales are approximately .20, indicating that the scales measure distinct, but somewhat related concepts. The FES was developed using a volunteer sample of 285 families. According to Moos and Moos, the instrument is able to significantly discriminate among families and is sensitive to differences in perception of family functioning among family members. The Family Environment Scale appears to be a valid and reliable tool for measuring family functioning. Use of a true-false format, however, may be a less effective manner of measuring a family's perception of its functioning than the usual Likert-type format.

A shorter instrument to measure family functioning was developed by Smilkstein (1978). Smilkstein's Family APGAR was designed as a five-item screening tool to assess an individual's perception of family functioning across five dimensions: adaptation, partnership, growth, affection, and resolve. Researchers have tested the reliability and validity of the APGAR with several populations. A test of construct validity with a group of nonclinical families (N = 38) and a group of adult outpatients at a community mental health center (N = 20)

indicated a strong correlation (0.80) between subjects' scores on the APGAR and the Pless and Satterwhite (1973) Family Functioning Index. The subjects' APGAR scores and a family therapist's evaluation correlated .64. Interspouse correlation for the APGAR was .67. The authors concluded that the Family APGAR is a valid measure of family functioning and is useful for both clinical practice and research (Good, Smilkstein, Good, & Shaffer, 1979).

In a subsequent study, Smilkstein, Ashworth, and Montano (1982) reported on trials of the APGAR in three college-student populations (N = 529, N = 486, and N = 297), psychiatric outpatients (N = 158), family medical center patients (N = 133), and a cross-cultural population of students at the University of Taiwan (N = 2,541). A Cronbach's alpha of .80 was obtained for the first sample of college students, revealing adequate internal consistency for the APGAR instrument. The test-retest reliability of the APGAR at an interval of 2 weeks was .83 in the Taiwanese population. From these findings, the authors concluded that the APGAR is a reliable, valid, and versatile instrument for assessing family functioning. Due to the instrument's brevity, however, it cannot be considered more than a screening tool for indicating problem families. Further, the APGAR has not been tested using a population of adults experiencing sudden, severe illness.

Using Smilkstein's (1978) APGAR as a base, Bednarz (1980) developed a 70-item instrument to measure family functioning in the marital dyad 8 to 16 weeks post-mastectomy. The tool was adapted from the instrument used in this study designed to assess marital functioning in

the dyad post-myocardial infarction (Kline & Warren, 1982). Development of Kline and Warren's marital functioning instrument is discussed in Chapter IV. Bednarz's family functioning instrument included items to measure the dimensions of Adaptation, Partnership, Growth, Affection, and Resolve. Items were also included from the Symptom Checklist 90 that measure anxiety and depression in order to provide a measure of construct validity. Reliabilities for each of the APGAR dimensions were computed using alpha coefficients. The following alphas were reported: Adaptation .72, Partnership .74, Growth .61, Affection .78, and Resolve .65. No significant differences were discovered in the husbands' and wives' individual perceptions of family functioning. Further, there was no significant relationship between the woman's perception of her health, family developmental stage, or use of adjuvant therapy for breast cancer and difference in perception of family functioning. Additional research is needed to establish the reliability and validity of this instrument due to the small sample.

The investigator's review of nursing literature revealed one additional instrument to measure family functioning developed by a nurse researcher. The Feetham Family Functioning Survey (FFFS) (Roberts & Feetham, 1982) assesses three areas of family functioning: (a) the relationship between the family and broader social units, (b) the relationship between the family and subsystems, and (c) the relationships between the family and each individual member. Roberts and Feetham argued that the instrument is distinct in that it is based on an ecosystem framework, derives from nursing practice, and assesses

family relationships from three perspectives. The instrument consists of 21 items, each containing three scales. According to Roberts and Feetham, the FFFS has been tested in longitudinal and cross-sectional studies using families with normal infants and with children born with myelodyplasia. The authors reported a Cronbach's alpha of .81 and a 2-week test-retest reliability of .85 for the instrument using a sample of 103 mothers of myelodysplasic children. Concurrent validity was established by administration of both the FFFS and the Family Functioning Index (Pless & Satterwhite, 1973) to 103 respondents. Subjects' scores on the two instruments correlated -.54 ($p < .001$). The FFFS thus appears to be a valid and reliable tool for assessing family functioning in families with normal infants and myelodysplasic children. The instrument has not been used with childless couples or with families in which the husband or wife has a chronic illness. Further research is therefore needed to establish the reliability and validity of the tool with these populations.

Only one instrument was found, in addition to that of Kline and Warren (1980), designed specifically to assess family functioning post-myocardial infarction (Dhooper, 1983). The author developed a Family Adjustment to Crisis Scale ($a = .78$) to measure four areas of family functioning: (a) financial management, (b) household management, (c) dealing with the needs of children, and (d) maintenance of family members' emotional health. Dhooper administered the tool to spouses of patients ($N = 40$) who had suffered a first myocardial infarction to identify the areas of family functioning most vulnerable to crisis

during the patient's hospitalization, and at 1 and 4 months after discharge. Results indicated that financial management and family members' emotional health were the two areas of functioning in which the patient's MI had the greatest effect. At 4 months post-infarct, while the crisis was over for most of the families, spouse anxiety (73%) and financial management (38%) continued to be of concern. The reliability and validity of the tool are incompletely established due to the small sample. Further research is therefore needed to validate the results.

In summary, the investigator's review of literature pertinent to marital functioning indicated that the terminology used by researchers to delineate the marital relationship qualitatively is confusing. The terms "satisfaction" (Snyder, 1979), "adjustment" (Spanier, 1976), "vitality" (Ammons & Stinnett, 1980), and "functioning" (Pless & Satterwhite, 1973; Smilkstein, 1978) were all used to describe similar constructs. Common dimensions of the marital relationship measured by the various instruments include problem solving, decision making, role relationships, affection, and communication.

Eight studies were found in which researchers addressed the concept of family functioning specifically (Barnhill, 1979; Dhooper, 1983; Epstein et al., 1983; Moos & Moos, 1976; Olson et al., 1978; Pless & Satterwhite, 1973; Roberts & Feetham, 1982; Smilkstein, 1978). The work of one of these researchers, however, has limited applicability in research at present because an instrument has not been developed

to measure his conceptualization of family functioning empirically (Barnhill, 1979).

Smilkstein (1978), Moos & Moos (1976), Olson et al. (1978), and Pless and Satterwhite (1973) offered instruments with reasonable reliability and validity. Smilkstein's (1978) APGAR, while valuable for screening purposes, does not provide for comprehensive assessment of family functioning due to its brevity. In addition, only one of these instruments, the Family Functioning Index (Pless & Satterwhite, 1973), was developed using samples in which family members had chronic health problems. While the focus of Pless and Satterwhite's research has been families with chronically ill children, one study was found in which the FFI was administered to married adults with chronic stable angina (Brown et al., 1982).

From nursing literature, the investigator discovered only one instrument with acceptable reliability and validity (Roberts & Feetham, 1982). The Feetham Family Functioning Survey is distinct in that it was derived from nursing practice and is based on an ecosystem perspective. To date, the instrument has been tested only on families with normal infants or children with myelodyplasia. Research with other samples is therefore needed to increase the utility of the tool.

Two studies were found, in addition to that of Kline and Warren (1980), in which the authors developed instruments to measure family functioning in a specific patient population (Bednarz, 1980; Dhooper, 1983). Bednarz explored family functioning in the marital dyad post-mastectomy using an instrument based on Smilkstein's Family APGAR.

Bednarz's study was the only nursing work discovered, other than that of Kline and Warren, to address family functioning in the context of adult chronic illness. Dhooper (1983) measured family functioning during hospitalization and at 1 and 4 months post-myocardial infarction to determine the areas of functioning most affected by the crisis. Acceptable reliabilities were reported for both Bednarz's (1980) and Dhooper's (1983) instruments. Insofar as the samples used to test the psychometric properties of the instruments were small, however, further research is needed to establish their reliability and validity.

Resources Used by the Husband and Wife Post-Myocardial Infarction

Resources are defined by researchers as those assets or capabilities upon which individuals and families may draw to cope when faced with a stressful situation (Lazarus & Folkman, 1984; McCubbin & Patterson, 1983). According to Folkman, Schaefer, and Lazarus (1979), resources are an integral part of cognitive appraisal and information processing in dealing with stress. Resources provide data for the individual and/or family to evaluate in ascertaining the effect of a given stressor on individual and family well-being and thus serve as mediators of stressful situations within the family.

While numerous types of resources have been identified by researchers, the focus of this study is the use of resources post-myocardial infarction and more specifically, the social, cultural, religious, and medical resource dimensions. The literature review is therefore limited

to those studies that address resources used by patients and spouses post-MI.

Identification and use of resources is crucial for families in which the husband has experienced an MI. Because a myocardial infarction is a crisis of major proportions for the patient and family, numerous adjustments are required for those who survive. Life-style changes, reordering of priorities, and altered self-concept are common reactions after an MI. In coping with these life contingencies, the individual uses the set of resources and capacities which he possesses.

Jacobson and Eichhorn (1964) were among the first researchers to delineate a specific set of resources used by families experiencing heart disease. The authors used an exploratory design to study farm families (N = 54) in which the husband had hypertensive or atherosclerotic heart disease. An open-ended, semi-structured interview was used to obtain information from the wives, while data from the husbands were gathered via structured interviews and medical examinations. According to Jacobson and Eichhorn, the resources used by subjects derived from a number of sources, including individuals, the community, and society. The largest number of resources, however, originated from within the family itself. Immediate and extended family were named as the greatest sources of help for both physical work and emotional support by 65% of the wives. Other resources indicated by subjects included neighbors, friends, hired help, the value system of the family, financial reserves, communication among family members, and stage of the family life cycle. Although the sample was small and

homogeneous in character, the findings have some valuable implications for patients post-MI. First, families experiencing severe illness are able to identify a number of resources to assist them in coping; second, these resources derive from multiple levels: the individual, the community, and the family system.

Similar findings were reported in later studies by Croog and Levine (1977, 1982). The work of these authors has contributed most significantly to the understanding of resources post-myocardial infarction. In their prospective study of men experiencing a first myocardial infarction (N = 293 and N = 205, respectively), the authors sought to describe what happened to patients after an MI and what factors influenced patient outcome at 1 year and 8 years post-infarction. Extensive interviews were conducted with both patients and spouses during hospitalization and at 2 months, 1 year, and 8 years after the infarct, using a schedule consisting of standardized questions, probes, check-lists, and multiple-choice and fill-in-the-blank items.

One of Croog and Levine's (1977, 1982) basic assumptions was that patients possessed an "armory of resources" that would influence patient outcome. The "armory of resources" refers to the array of institutional, psychological, and social resources that are available for patients to use in problem situations. Croog and Levine identified three levels of resources important to patients post-MI: (a) individual assets such as personality characteristics and physical status; (b) assets which derive from social institutions such as family, church, work, and friendship groups; and (c) formal organizations at

the community level such as hospitals and the medical care network. The authors analyzed the various levels of resources in relation to patient outcome, focusing on statistical relationships rather than on the differential meaning of specific support for individuals.

Like Jacobson and Eichhorn (1964), Croog and Levine (1977) discovered that family and others in the patient's social network were important resources during the post-infarction year. The authors interviewed subjects (N = 293) at 12 months post-MI to determine the types of help received from various sources. Subjects were asked to indicate the types of help provided by both kin and nonkin sources and to rate them according to helpfulness. Kin (parents, siblings, family of orientation) and nonkin (friends, neighbors) were both listed as "very helpful" by a number of subjects. Moral support was the most frequently reported type of assistance rendered by all sources, followed by provision of services. Financial aid was a less common type of help for patients and was most often received from either parents or siblings. The authors examined a number of correlates of the level of aid reported from kin and nonkin sources, including social status, age, education, pre-illness visiting patterns, and illness setbacks by computing gamma scores. Among these variables, pre-illness visiting pattern was found to be most significantly related ($p < .01$) to perceived support from both kin and nonkin sources. Further, significant associations ($p < .01$) were discovered between the subject's level of perceived help in one category of kin and nonkin and level of perceived helpfulness in other categories. Croog and Levine concluded that those

individuals who are socially integrated have positive relationships with others and thus are more likely to receive aid from others when ill.

Family and friends were also identified as sources of support by wives of myocardial infarction patients (N = 59) in a Finnish study by Hentinen (1983). Subjects were mailed a questionnaire 8 weeks after their husbands' infarct occurred. The majority of subjects (60%) reported receiving support from relatives during their husband's illness. For an additional 37% of the wives, a neighbor was the source of support. Seventeen percent of the respondents, however, stated that they had not received support from anyone during the first 8 weeks post-MI. A number of wives also expressed the need for more instruction from health care professionals regarding care of their husbands at home. Most wives reported experiencing one or more physical symptoms of stress in the first 2 months after the infarct. Eighty-three percent had suffered from insomnia, 69% from fatigue, and 56% from depression. In addition, 54% found it necessary to consult a physician for either a previously diagnosed or a new health problem. Hentinen concluded that symptoms revealed by the wives indicated that they experienced stress following their husbands' myocardial infarctions and that instruction and support might have helped to mediate the stress. The author reported only descriptive statistics, however, and did not attempt to correlate support and symptoms of stress. Use of inferential statistics would have strengthened Hentinen's findings.

Finlayson (1976) conducted an exploratory study of wives of heart patients to determine if differences in outcome after an MI were associated with the type and amount of network support available to the family. Seventy-six wives were interviewed during their husband's hospitalization and at 1 year post-infarction to identify whom the wives perceived as helpers and lay consultants during their husband's illness. Help was identified in five categories: (a) children, (b) wife's kin, (c) husband's kin, (d) nonkin, and (e) spouse. Subjects' responses were then related to measures of patient outcome (husband working and wife defining the illness as over). Although differences in types of help were identified by different socioeconomic groups, families in which the wife acknowledged help and lay consultation from a greater number and variety of sources had more favorable outcomes than those with fewer and more limited sources of network support. Although the purpose of Finlayson's research was to describe the relationship between network support and patient outcome, only descriptive statistics were presented in the study. The significance and degree of relationship between the variables are therefore unclear.

Network support and patient outcome were also the focus of a 9-year prospective study of noninstitutionalized adult residents in Alameda County, California (N = 6,928) conducted by Berkman (1982). The author explored the effect of four types of social connections (marriage, extended family and close friends, church membership, and other group affiliations) on morbidity and mortality risk. A Social Network Index was developed to assess the four areas. Examination of

the Index in relation to subjects' cause of death indicated that as social connections decreased individuals had a significantly increased risk of dying from a number of causes including ischemic heart disease ($p < .001$). The Index was also found to be related to mortality risk independent of a large number of other variables including smoking, obesity, and eating patterns. It thus seems that adequate social networks may serve to protect individuals from disease and death. Insofar as the major outcome variable in this study was mortality, however, it is impossible to determine where, along the trajectory of severe illness, social network support has the greatest effect. Implementation of intervention strategies by health care professionals is therefore difficult.

From the above discussion, it is evident that social networks are an important resource for the marital couple after the MI. Kin and nonkin have both been identified as sources of support by couples (Croog & Levine, 1977; Finlayson, 1976; Hentinen, 1983; Jacobson & Eichhorn, 1964). Types of assistance provided to couples post-MI include moral support, physical help, and, less frequently, financial assistance (Croog & Levine, 1977). Several researchers have postulated that social networks or social support positively influence patient outcome post-MI (Finlayson, 1976; Hentinen, 1983), but tests of significance were not completed to determine the degree of relationship between variables in these studies. Berkman explored the relationship between social networks and morbidity and mortality from ischemic heart disease. Insofar as the major outcome variable in Berkman's study was

mortality, however, her findings have limited applicability to this study.

Religion was another resource addressed by Croog and Levine (1972, 1977, 1982) in their prospective study of males experiencing a first MI. The authors (1972, 1977) examined religious outlook, secular outlook, and church attendance in subgroups of Jews, Catholics, and Protestants post-myocardial infarction (Total N = 345). According to Croog and Levine, the majority of subjects (85%) considered their religion to be "very important," "important," or "fairly important" to them. No significant changes were discovered in the patients' personal valuation of religion or in church attendance during the post-infarction year, however. Further, only 6% of the sample (16 subjects) indicated that they had contacted a clergyman for guidance or support during convalescence. Thus, while religion was important to the majority of patients, they did not perceive clergymen as a resource for them after the MI. In addition, the experience of a life-threatening disease did not result in a change in religious orientation for patients. Religion continued to be important for those who valued it before the infarct, but it was not a resource for the nonreligious either pre- or post-infarction. It should also be noted that the authors did not measure the respondents' depth of religious feeling or piety. Data on these parameters may have yielded different results.

Eight years after the patients' first myocardial infarction, Croog and Levine (1982) reexamined subjects' (N = 205) religious resources in relation to long-term outcome. Operational measures of religious

organization and spiritual resources included the following: religious affiliation, church attendance, and importance of religion. Both church attendance and importance of religion were significantly correlated ($p < .05$) with the outcome measure "perceived gains from the illness," as measured by the chi-square test. In addition, importance of religion was significantly related ($p < .05$) to subjects' satisfaction with life 8 years post-MI. Religion may thus have long-term positive effects on patients' recovery from a myocardial infarction.

In spite of Croog and Levine's promising findings, no other studies were discovered in medical, psychological, sociological, or nursing literature in which the researchers addressed religion as a resource post-myocardial infarction. Further, the investigator found no studies which addressed religion as a resource in chronic disease or other acute illnesses. Studies were found in which researchers examined the prevalence of physical, mental, and social symptoms in relation to subjects' religious allegiance (Hannay, 1980) and the role of religious attendance in facilitating assimilation into a new culture in a sample of immigrants (Walsh, 1980), but the focus of these authors was the prophylactic effect of religion in a relatively healthy population. The investigator's focus in the present study is religion as a resource in facilitating recovery from an MI and its relationship to marital functioning.

A further important resource examined by Croog and Levine (1977, 1982) was medical care. In the authors' prospective study of patients at 1 year post-MI ($N = 293$), physicians were the most consistently used

professional resource cited by subjects. Patients reported maintaining consistent and continuous contact with their physicians during rehabilitation. At 1 year post-infarction, 96% of the respondents reported having a regular physician, and 90% of these planned to continue with the same physician in the future. In addition, 90% of the subjects had no negative comments on the performance of their physicians. Other types of institutional and professional resources such as cardiac rehabilitation clinics, social service agencies, and visiting nurse services were used by patients less frequently during the first year post-infarction. Only 28% of the subjects had contacted one or more of the resources listed. The findings of Croog and Levine indicated that patients perceived their physicians to be the most valuable health care resource available to them post-MI and thus used physician services more frequently than other types of services such as rehabilitation programs.

In a follow-up study of the same population (N = 205) at 8 years post-MI, Croog and Levine (1982) cited similar findings. At Year 8, 90% of the subjects reported having seen a physician in the preceding year, and for 94 of those subjects the visits were for health maintenance reasons, rather than for acute problems. Seventy-two percent of the patients had a regular physician for cardiac care, and 96% planned to continue seeing the same physician in the future. Further, 62% of the subjects reported seeing the same physician at Year 8 as they had seen at Year 1. Other types of services had been used by patients infrequently between Years 1 and 8, with the most frequently used

additional resources being outpatient hospital services (15.1%) and unemployment services (12.5%). The findings of Croog and Levine indicated the importance of the physician as an ongoing resource for patients post-MI. Stability of the physician-patient relationship is also indicated by the findings. It is surprising, however, that additional services were used so seldom by subjects, particularly as the authors stated that such services were readily accessible in the Boston area. Croog and Levine failed to report whether or not use of adjuvant services was encouraged by subjects' physicians, which may have influenced the study findings.

In contrast to the findings of Croog and Levine (1977, 1982), Hentinen (1983) discovered that only 24% of the wives (N = 59) of MI patients reported receiving support from a physician during their husbands' illness. A slightly greater number (32%) cited the registered nurse as a provider of support. The wives also expressed the need for more information regarding care of their husbands at home. Diet, the procedure to follow during a subsequent MI, and drug information were the subjects about which wives reported receiving the least instruction. Hentinen proposed an instructional model based on the nursing process to insure adequate support and instruction for the wives of MI patients. Hentinen's findings also pointed to the need for both patients and spouses to receive better instruction and support from all health professionals involved in their care to assist them in coping post-MI.

Mayou, Williamson, and Foster (1976) used a semi-structured schedule to interview patients and relatives (N = 40) at 1 week post-MI and 1 month after hospital discharge to determine subjects' understanding of the information they received and their satisfaction with treatment. The majority of patients (73%) expressed general satisfaction with their treatment but felt that the information they had received from health care professionals was inadequate and vague. Sixty-five percent of both the patients and family members reported receiving little or no advice from health professionals regarding the patients' illness. In addition, 54% of relatives were dissatisfied with the care received by the patient. The authors' findings indicated the need for better instruction for the relatives of patients after the MI.

The work of researchers in the area of medical resources has indicated conflicting findings. As part of their large prospective study, Croog and Levine (1977) interviewed subjects to determine what institutional and community resources had been used during the post-infarction year. The authors reported that the physician is the most important source of support for patients post-MI and that subjects were satisfied with the care they received from their physicians. On the other hand, only 24% of the wives of MI patients identified the physician as a support to them during their husbands' illness (Hentinen, 1983). Both patients and families also reported the need for more information regarding the patient's disease process and the post-myocardial infarction regimen (Hentinen, 1983; Mayou et al., 1976). Further research is needed to validate the use of the physician as a

resource and also to identify other health care resources of value during rehabilitation. The findings discussed above also pointed to the need for better instruction as well as ongoing support for both patients and families post-myocardial infarction.

One other resource of interest in this study, which has been infrequently examined to date, is cultural resources. Culture is most commonly studied in relation to differences in pain perception (Zborowski, 1952), illness behavior (Almeida & Wenger, 1982; Mechanic, 1963), or presenting complaints (Zola, 1966) among various ethnic groups such as Jews, Germans, Italians, and Irish. Three of the studies were published over 18 years ago and were completed using samples of healthy individuals. Their application to the present study is therefore limited. One recent study was found in which the authors described cultural differences in reactions to an MI (Almeida & Wenger, 1982). Where the focus of the studies cited above was that of cultural differences, the identification of such differences did not enable the researchers to make claims regarding cultural resourcefulness. More specifically, the authors did not address the concept of culture as resource post-myocardial infarction, which is the focus of this study.

Croog, Levine, and Lipson (1972) explored cultural differences from an alternate perspective. In their previously mentioned study of help patterns post-MI, the authors examined ethnic origin of subjects as a possible associated variable to the level of help received. Subgroups of patients of Irish (N = 61), Italian (N = 47), Jewish (N =

43), and British-Old American (N = 29) were compared with each other and the remainder of the sample. No significant differences were found between members of the ethnic groups or the rest of the sample in regard to the level of assistance received by patients from kin or nonkin sources. Croog and Levine (1977) concluded that ethnic differences in terms of social networks and assistance patterns may be minimized in a crisis situation such as a myocardial infarction. Lack of pertinent literature related to cultural resources may result from incorporation of the concept of cultural resources into the broader concept of social support. The work of Lin, Ensel, Kuo, and Simeone (1979) gave credence to this theory. The authors studied the effects of social support and stressful life events on psychiatric symptoms in a Chinese-American population (N = 170). The authors' nine-item scale (alpha = .52) to measure social support contained several items which tapped the respondents' involvement and interaction with the Chinese subcultural community. Cultural traditions were viewed as a part of the social support system available to clients. The relationship between cultural resources and social support is still unclear, however. Further research is needed to clarify those aspects of culture which serve as assets upon which the individual and family may draw when faced with a crisis situation.

In summary, researchers have delineated the importance of resources for both patients and families post-myocardial infarction. A number of specific resources have been described, including social networks (Croog & Levine, 1977; Finlayson, 1976; Hentinen, 1983), the

medical care system (Croog & Levine, 1977, 1982; Mayou et al., 1976), and religion (Croog & Levine, 1977). While the majority of studies were exploratory in nature, a few researchers have sought to relate the availability of specific resources to patient outcome post-MI (Croog & Levine, 1977, 1982; Finlayson, 1976). No studies were found, however, in which researchers explored the relationship between resources and marital functioning after an infarct. In addition, Hentinen's (1983) study of social support for wives post-MI was the only nursing work discovered which addressed resources. Further research is needed to delineate the mediating effect of various resources on patient and family outcome post-myocardial infarction.

The Effect of a Myocardial Infarction on the Marital Relationship

The psychosocial sequelae of a myocardial infarction have been extensively studied by researchers. Attention has been focused on the effects of an MI on the patient (Croog, Shapiro, & Levine, 1971; Hackett & Cassem, 1975; Mayou et al., 1978a), the spouse (Hentinen, 1983; Mayou et al., 1978a; Papadopoulos et al., 1980; Wishnie et al., 1971), and the marital relationship (Croog & Levine, 1977; Mayou et al., 1978a; Meddin & Brelje, 1983). While the emphasis in this study is on the marital relationship, and more specifically on marital functioning post-MI, a brief summary of the research regarding the psychosocial effects of myocardial infarction on the patient and the spouse will be provided first as a background for the discussion of the marital relationship.

Researchers have documented the emotional and psychological consequences of a myocardial infarction upon the individual experiencing it. Denial (Croog et al., 1971), depression (Hackett & Cassem, 1975), and anxiety (Mayou et al., 1978a) are common symptoms of MI patients during convalescence. Psychological distress may persist up to 1 year post-infarction with patients reporting tension, anxiety, fatigue, irritability, and depression (Mayou et al., 1978a).

The psychological trauma of an MI leaves its effect on the victim's spouse as well. According to Skelton and Dominion (1973), wives of MI patients report the convalescent period to be stressful due to marital tension resulting from their husbands' dependency and irritability. Interpersonal friction may result from conflict regarding the patient's therapeutic regimen and the wife's overprotectiveness (Wishnie et al., 1971). In addition, many wives express fears of precipitating another heart attack either by quarreling with their husbands (Mayou et al., 1978b; Wishnie et al., 1971) or by resuming sexual relations (Papadopoulos et al., 1980). Wives also report psychological symptomology post-infarction including insomnia, fatigue, depression, and loss of appetite (Hentinen, 1983).

The distress generated in the patient and spouse as a result of the myocardial infarction may affect the couple's marital interaction. A number of studies were found which examined husbands' or wives' perceptions of the marital relationship post-infarction (Croog & Levine, 1977, 1972; Mayou, 1979; Mayou et al., 1978a, 1978b; Meddin &

Brelje, 1983; Skelton & Dominion, 1973; Stern & Pascale, 1978; Tyzenhouse, 1973; Wishnie, Hackett, & Cassem, 1971).

Tyzenhouse (1973) conducted home interviews with 20 wives of male patients who had experienced an MI in the last 6 to 20 months to determine the family's reaction to the husband's illness. The author's hypothesis was that those wives who were the most knowledgeable about their husband's disease and the therapeutic regimen would demonstrate the best adjustment and have husbands who made the most progress during convalescence. Most of the wives reported that the husband's MI placed a financial strain on the family. In addition, 70% stated that their husbands were more irritable and demanding following the illness. Eight wives reported that their husbands were depressed, and four families experienced problems severe enough to warrant professional counseling. No correlation was found between the wife's knowledge and the husband's progress or family stability. Tyzenhouse concluded that emphasis should be placed on mobilizing the personal resources of the patient post-MI in order to promote his recovery. The data indicated that the MI may be disruptive to marital and family relationships. Insofar as the study was descriptive in nature and the sample was small, however, further research is needed to validate the author's findings.

Wishnie et al. (1971) used a semi-structured format to interview a group of male and female MI patients (N = 24) 3 to 9 months after hospital discharge to explore areas of emotional distress experienced during convalescence. Of the 24 patients, 18 had families with whom

they resided. All 18 patients reported the occurrence of conflict and family anxiety regarding the patient's progress during rehabilitation. In 11 families the conflict resulted from confusion regarding the meaning of instructions received from the physician. Wives tended to be oversolicitous of their husbands, which contributed to tension within the family unit. Difficulties were reported even in families with stable marriages pre-infarction, and for those couples with marital problems of long duration, conflicts tended to worsen after the MI. The authors concluded that better follow-up was needed by physicians to anticipate problems and thus to assist families to cope more effectively. While study findings seemed to indicate that the MI has a negative effect on the marital relationship, the findings have limited generalizability due to the small sample and exploratory nature of the study design. Statistical analysis of the data was not done. In addition, the authors failed to report at what point during convalescence the interviews were completed. According to the work of other authors (Skelton & Dominion, 1973), conflict is most common in the first 3 months post-MI and gradually diminishes by 12 months post-infarction.

Skelton and Dominion (1973) used a semi-structured format to interview 65 wives of men who had suffered a first myocardial infarction. The wives were interviewed during their husbands' hospitalization and at 3, 6, and 12 months post-MI to explore the psychological consequences of this experience on the wives during the first 12 months following the infarct. By 1 year post-MI, 38 of the couples had

returned to their usual pattern of sexual activity, 11 couples reported a decrease, and 3 couples had stopped having intercourse altogether. The remaining three wives reported an increase in sexual activity which they attributed to an increase in their husband's libido following his illness. In addition, marital quality post-MI appeared to be related to the quality of the couple's relationship pre-infarction. Ten of the 65 wives reported experiencing marital problems before the MI. Of this group, eight thought the MI had exacerbated the problems, one wife thought the relationship had improved, and one reported no change. Twenty-seven of the remaining wives reported a change in marital relationship during the first 3 months post-MI and attributed it to increased anxiety and irritability of both partners. By 1 year post-MI, only ten of the wives whose husbands had made a good recovery reported an appreciable change in marital relationship. These wives tended to be overprotective, while their husbands remained anxious and demanding. While the study was exploratory in design and no statistics were reported, the findings seemed to support the work of Wishnie et al. (1971) regarding a change in the marital relationship during the first few months of the post-infarction year. Further, those couples who experienced marital difficulties before the infarction seemed to be at greater risk for further marital deterioration following the MI.

Similar findings were documented in a study by Stern and Pascale (1978). The authors interviewed spouses of MI patients (N = 38) during their partners' hospitalizations and at 6 months post-infarction. Those spouses (N = 7) who were anxious or depressed at the 6-month

Those spouses (N = 7) who were anxious or depressed at the 6-month interview had significantly higher scores in areas of marriage (p < .01), friction (p < .01), and distress (p < .01) on an instrument to assess maladjustment compared with the remainder of the sample. No correlations were observed between psychological symptoms of patients and spouses, but the husbands of anxious wives were invariably those who denied their illness. Many of the symptomatic spouses, who had stated marital problems before the MI, cited increased difficulties post-infarction. Fear of precipitating another infarct resulted in marital estrangement and a decrease in communication between partners. From the first to the second interview 13 subjects, the majority being husbands of female patients, were lost to follow-up, rendering statistical analysis of the data difficult. Nevertheless, the authors' findings seemed to support the work of Skelton and Dominion (1973), who also found that the marital relationship post-MI tended to deteriorate in couples experiencing difficulties before the infarct.

Mayou et al. (1978b) explored the relationship between pre- and post-infarction marital adjustment in a population of women whose husbands had experienced a first MI. The authors interviewed wives (N = 82) during their husband's hospitalization and at 2 and 12 months post-MI to determine the wives' psychological adjustment. Using chi-square statistics, variables hypothesized to be determinants of the wives' psychosocial adjustment post-MI were analyzed for significance. Mental state was found to be significantly related (p < .05) to the authors' ratings of marriage and family life and changes in

also discovered between subjects' marital and family quality and sexual satisfaction before the husband's illness and these variables at 1 year post-MI. The authors concluded that the measures of psychosocial adjustment before the infarct are the best predictors of outcome for the wives 1 year after the heart attack. These measures may thus be of value in identifying wives who are at risk for the development of marital difficulties so that interventions may be formulated to assist them in coping with problems that occur after the MI.

Using the same sample, Mayou (1979) examined the psychosocial outcomes of patients and spouses at 2 months and 1 year post-MI by using a semi-structured interview format to obtain detailed information from patients and spouses. Mayou (1979) reported that the heart attack influenced subjects' family life and marriage in two ways: (a) the MI increased the dyad's awareness of the value of their relationship, and (b) problems resulted from changes in the partners' mental states and behavior after the MI. Changes in the marital relationship, either for better or for worse, were common after the infarct. The significant predictors of these changes were the couple's marital quality pre-infarction and the occurrence of other stressful life events during the year. Chi-square and Kendall's tau were used to determine the significance and strength of relationships between selected variables. Premorbid satisfaction with marriage, family life, and sexual activity was found to be significantly correlated ($p < .05$) with satisfaction in these areas at 1 year post-MI. In addition, changes in marital and family satisfaction at 1 year were found to be significantly associated

($p < .05$) with both previous satisfaction and chronic marital and family difficulties. While Mayou and his associates relied on subjects' retrospective reports for their marital quality pre-infarction, which may be inaccurate, the authors were the only researchers to identify variables that predict marital changes post-MI. The quality of the couple's relationship after the infarct is adequately understood only by assessing both premorbid satisfaction and the occurrence of other life events during the convalescent year.

The focus of most authors has been the disruptive effects of the MI on the marital relationship. Changes, usually for the worse, have been well documented after the infarct, but marital deterioration is by no means inevitable. Mayou et al. (1978a) cited evidence of marital stability and even marital improvement in a sample of 100 male and female patients 1 year after they had experienced a first MI. The majority of the patients (55%) reported no change in their marital relationships at 1 year post-infarction. Of the remainder of the sample, 24% noted improvement in their relationship, while the other 20% reported a deterioration. For those couples whose marriages had improved, the crisis of the infarct had prompted a lasting reevaluation of their relationship.

Improvement in the marital relationship was also noted in a case study of five couples post-MI conducted by Meddin and Brelje (1983). The authors used an unstructured format to interview five couples to determine how social workers might be of assistance to them after the heart attack. In all cases, the husband had experienced an MI 2 to 10

years before the infarct. Husbands and wives reported experiencing feelings of anxiety and depression during convalescence from the MI. In addition, three wives reported that their husbands had become demanding during the illness. Two couples, however, reported that the convalescent period had had a positive effect on their relationship due to a slower life pace and increased time together as a couple. In both cases, the couples reported having had a strong relationship pre-infarction as well as the necessary social support during the crisis and recovery. The authors' findings indicated the possible role of resources in mediating the effect of the MI on the marital relationship. Due to the small sample and lack of statistical analysis, further research is needed to validate the findings. In addition, because subjects had experienced the MI 2 to 10 years previously, the couples' perceptions of its effect on their marital relationship may have been different than they were in the first year.

A significant weakness of the previously cited studies is that the authors relied on subjects' self-reports of marital quality both before and after the infarct, which may be biased. Further, the authors assessed the quality of subjects' marriages based only on self-reports obtained in interviews. Multidimensional assessments provide more accurate information regarding the marital relationship post-MI. A few studies were found in which the authors measured more than one dimension of marriage and family relationships after the infarct (Croog & Levine, 1977, 1982; Dhooper, 1983).

In their prospective study of myocardial infarction patients (N = 209), Croog and Levine (1977) examined the effects of an MI on the marital relationship during the post-infarction year by measuring the husband's perception of the couple's level of reported disagreement on selected issues and the patient's appraisal of his own marital happiness as well as that of his wife. The husbands were asked to complete a 12-item Index of Marital Disagreement questionnaire and to respond to two items with Likert-type response formats designed to rate marital happiness. The authors discovered that at 2 months post-infarction 38% of subjects reported low disagreement, 38% medium disagreement, and 23% high disagreement. Further, in contrast to the findings of other researchers (Mayou et al., 1978a; Wishnie et al., 1971), the level of marital consensus remained fairly stable over the study year with 48% of respondents reporting no change in the level of disagreement. Of those couples who experienced a change, the greatest number (40%) reported a decrease in the number of issues over which they disagreed. Ratings of marital happiness were also relatively stable over the post-infarction year. At 1 year post-MI, 16% of patients reported an increase in marital happiness, while 14% noted a decrease. In regard to their wives' happiness, patients stated that 19.5% were more happy and 24% less happy than before the illness. Marital happiness was not found to be significantly related to the health rating of the patient by his physician.

In a follow-up study (Croog & Levine, 1982) of the same population 7 years later, 88% of the subjects were still married, 95% of these to

the same women who were their spouses at 1 year post-MI. Married subjects (N = 180) were asked to evaluate both marital happiness and level of marital disagreement using the same instrument they had completed at 2 months and 1 year post-MI. Fifty percent of the men reported being "very happily married," 33% were "happily married," 15% considered their happiness "average," and 2% were "unhappy or very unhappy." The husbands perceived the marital happiness of their wives in the following manner: 46% "very happy," 35% "happy," 16% "average," and 3% "unhappy" or "very unhappy." Calculation of cross-tabulations indicated no relationship between ratings of marital happiness and the patients' health status at Year 8. In terms of marital disagreement, ratings at Year 8 were found to be similar to the ratings at 1 year post-infarction. Couples' reported marital happiness and level of marital disagreement at Year 1 were the best predictors of these variables at Year 8. Gamma correlations for Years 1 and 8 were .50 for marital happiness and .66 for marital disagreement. Thus it appears that marital happiness and marital disagreement remain relatively stable over time.

Only one study was found in which the researcher's central focus was family functioning post-MI. Dhooper (1983) studied families of patients (N = 40) who had suffered a first myocardial infarction to identify areas of family functioning most vulnerable to crisis, to determine coping strategies used by families to adjust, and to explore the process of adjustment over time. Data were collected from patients' spouses during hospitalization of the family member and at

1 and 4 months post-MI. The areas of family functioning examined included (a) maintenance of family members' emotional health, (b) financial management, (c) household management, and (d) dealing with the needs of children. By 4 months post-infarction, 20% of the families considered their overall family functioning to be worse than before the infarct, 40% rated it as "better," and 40% saw it as unchanged. Financial management and spouse's emotional health were the two areas of functioning most negatively affected by the crisis of the MI. The author concluded that the findings pointed to the need for use of social service workers to assist families in coping with the MI experience. Further research is needed to validate the author's findings due to the small sample and descriptive nature of the study. In addition, the author measured family functioning only up to 4 months post-MI, at which time the crisis may still be acute for families. Results may have differed if functioning were measured at 1 year post-infarction.

In summary, a number of researchers have sought to describe the effect of an MI on marital and family relationships. Studies have been completed in which the perspective of the patient (Croog & Levine, 1977, 1982; Wishnie et al., 1971), the spouse (Mayou et al., 1978b; Skelton & Dominion, 1973; Stern & Pascale, 1978), or both partners (Mayou, 1979) was reported.

It is evident that experiencing an MI is considered a crisis for the marital couple. Tension and conflict are frequently reported, especially in the first few months of convalescence (Skelton &

Dominion, 1973; Stern & Pascale, 1978; Tyzenhouse, 1973; Wishnie et al., 1971). The patient's therapeutic regimen is one of the most common areas of conflict for couples, with husbands tending toward dependency and wives toward overprotectiveness (Skelton & Dominion, 1978; Wishnie et al., 1971). Financial difficulties (Dhooper, 1983; Tyzenhouse, 1973) and problems of sexual adjustment (Skelton & Dominion, 1973) have also been reported post-MI.

At 1 year post-infarction, the crisis of adjustment seems to be over for most families. Studies were found in which authors reported that the marital relationship improved (Mayou et al., 1978a; Meddin & Brelje, 1983), deteriorated (Mayou, 1979; Stern & Pascale, 1978), or remained unchanged (Croog & Levine, 1977; Mayou et al., 1978a) by the end of the post-infarction year. Marital deterioration most frequently occurred, however, in those marriages in which there were problems before the infarct (Mayou et al., 1978b; Wishnie et al., 1971). The quality of the marital relationship preinfarction (Mayou, 1979; Meddin & Brelje, 1983; Skelton & Dominion, 1978; Stern & Pascale, 1978), the occurrence of other major life events during convalescence (Mayou, 1979), and adequate social support (Meddin & Brelje, 1983) have been proposed as possible predicting factors for the quality of the marital relationship post-MI.

While research in this area to date is promising, a number of methodological limitations are evident. The majority of the studies were exploratory in design and reported only descriptive statistics. A few studies were found, however, in which the authors explored the

relationships among adjustment and possible predicting variables after the infarct (Croog & Levine, 1982; Mayou, 1979; Mayou et al., 1978b; Stern & Pascale, 1978). In addition, some of the samples were small in size and thus were somewhat limited in their generalizability (Dhooper, 1983; Tyzenhouse, 1973; Stern & Pascale, 1978; Wishnie et al., 1971). Further, most of the researchers used self-report data from subjects to document the quality of the couple's relationship post-MI. Only two studies were found in which the quality of marital or family functioning was evaluated on more than one dimension (Croog & Levine, 1977, 1982; Dhooper, 1983). None of the authors reported both husbands' and wives' assessments of the marital relationship or explored differential effects of the MI on the partners. Further, no studies were found in which interventions such as marital counseling were included to follow-up the couples who experienced problems post-MI.

Summary

The marital couple's manner of relating to one another has been described using a variety of terms. One of the most helpful conceptualizations of the marital relationship for the purpose of this study is that of family functioning. The concept of family functioning has been extensively explored by researchers. A number of instruments have been developed to measure family functioning, and five of the instruments have been shown to be reliable and valid. Common dimensions of family functioning measured by the instruments include problem solving, decision making, role relationships, affection, and communication. Few studies were found in which researchers developed tools to measure

family functioning in a specific patient population. The samples in these studies were small, and the reliabilities and validities of the instruments were incompletely established. There is thus a need to develop valid and reliable instruments to measure marital functioning in couples experiencing acute and chronic illnesses. Further research is also needed to determine how marital functioning is affected by the illness of one of the partners.

Resources have been shown to be important in aiding the process of recovery post-myocardial infarction. Social resources have been the most extensively studied resource to date, with researchers focusing on the amount of network support or assistance available to patients and spouses after the infarct. Two studies were found in which the level of social network support positively influenced patient outcome post-MI, but inferential statistics were used in only one of the studies. There is thus a need for correlational studies to delineate more fully the relationship between social resources and family or patient outcome post-MI. Further, researchers to date have explored only the quantitative aspects of social resources after an MI (frequency of contacts, number of relationships). The qualitative aspects of social resources post-infarction such as the strength and quality of the individual's personal relationships remain a needed area for future research. There is also a need for intervention studies to delineate more fully the mediating effect of specific resources on marital functioning post-myocardial infarction.

Medical resources have been described by several researchers. The physician has been identified as the primary medical resource for patients post-MI, with other services such as rehabilitation programs and visiting nurse services being used less frequently. Researchers have indicated that spouses and other family members may be less satisfied than patients with the care and support received from the physician. Lack of adequate instruction regarding the post-MI rehabilitation regimen is another area that has been studied in relation to medical resources. Further research is needed to determine the factors that influence the use of services post-MI. There is also a need for studies which explore issues related to family education after the infarct to enable hospital- and community-based rehabilitation programs to meet patient and family needs more effectively.

Religion as a resource post-MI has not been as extensively studied as social or medical resources. The crisis of the myocardial infarction has not been shown to alter individual religious orientation either for better or for worse. For those individuals to whom religion was important before the infarct, it remains an important resource after the MI. No studies were found in which respondents' depth of religious feeling or piety was explored in relation to recovery after an infarction or in which religious resources were related to marital functioning post-MI.

Cultural resources, as defined in this study, have not been delineated by researchers. Studies were found in which differences in ethnic groups were explored in relation to illness behavior, pain

perception, and presenting complaints. No studies were found, however, in which researchers described culture as a resource post-myocardial infarction.

The effect of a myocardial infarction on the marital relationship has been extensively studied by researchers. Tension and conflict between the partners are frequently reported symptoms in the first few months post-MI. Studies were found in which the marital relationship deteriorated, improved, and remained unchanged after the infarct. Marital deterioration seems to occur most frequently, however, in those marriages in which there were problems before the infarct. The quality of the marital relationship preinfarction, the occurrence of other life events during convalescence, and social support have been proposed as possible predictors of marital functioning post-MI. Few studies were found in which the quality of the marital relationship was assessed on more than one dimension. Further, no studies were discovered in which husbands' and wives' perceptions of marital functioning were measured individually and compared post-MI. There is thus a need for studies in which both the husbands' and wives' perceptions of marital functioning are measured multidimensionally.

Nursing research in the areas of marital functioning and use of resources after an MI is sparse. Three studies by nurse researchers were found in which the authors sought to develop instruments to measure family functioning. Research in this area is promising, but studies are needed in which family functioning is described in populations of adults with chronic and acute illnesses. Only one nursing

study was found in which the researcher explored a specific resource post-MI, but inferential statistics were not used to delineate the relationship between the variables. In the area of marital functioning post-MI, one exploratory study was found in which the nurse researcher sought to describe the areas of family functioning most affected by the MI. Due to the small sample and lack of statistical analysis, however, the findings of this study are of limited value. There is need for nursing research in the areas of family theory, resource use post-MI, and the effect of an MI on the marital relationship. Studies in which statistical analysis is used to delineate the relationship between variables and also intervention studies to further nursing practice would be of particular benefit to the nursing profession.

In conclusion, there are several implications for research from this literature review. The necessity of studying both the husbands' and wives' perceptions of marital functioning post-myocardial infarction is evident as studies of this type have not been completed. Differences in the partners' perceptions need to be identified as such differences may increase the potential for marital deterioration post-MI. Multidimensional assessments of marital functioning are necessary to delineate the areas of functioning most affected by the MI experience. In addition, there is a need for research in which the relationships between specific types of resources and patient outcome post-MI are explored. Identification of resources that mediate the negative effects of the MI on patient outcome would be of value in developing interventions for use with families post-MI. Research is also needed

to describe the relationship between selected resources and marital functioning in the husband and wife post-myocardial infarction as this relationship has not ben delineated to date.

In Chapter IV the sample-selection criteria, procedures for data collection, operational definitions of the variables, hypotheses, instrumentation, scoring techniques, and statistical analysis will be discussed.

CHAPTER IV

METHODOLOGY

Overview

A descriptive, correlational analysis was used in this study to explore the relationship between perceived social, cultural, religious, and medical resources and perceived marital functioning in the husband and wife post-myocardial infarction. It was hypothesized that resources and marital functioning were positively correlated such that those individuals (both husbands and wives) who perceived the husband's resources to be adequate would perceive a higher level of marital functioning than those individuals who perceived resources to be inadequate. In addition, perceptions of the partners within the marital dyad regarding resources and marital functioning were examined individually and compared to determine similarities and differences.

In this chapter the research methodology and design used in the study are discussed. Operational definitions of the variables and the instruments used to measure them are described. Sample selection, procedures for data collection, scoring techniques, statistical analysis, and protection of human subjects are also delineated.

Sample

The subjects for this study were a convenience sample of 98 couples (196 individuals) living in Lansing and the surrounding area, Flint and Grand Rapids. A formal cardiac rehabilitation program at Lansing Community College and six physicians' offices provided names of potential subjects. Criteria for couple inclusion in the study were:

1. Males between the ages of 35 and 69 years.
2. Diagnosed and hospitalized with a myocardial infarction within the past 12 months.
3. Married and living with spouse at the time of the study.
4. Able to read, write, and speak the English language.

No attempt was made to randomize the subject selection or to limit the sample based on severity of myocardial infarction, history of cardiac bypass surgery or previous MI, or the presence of residual cardiac problems such as angina or congestive heart failure.

Data-Collection Procedures

The data used by this researcher were collected from 1981-1983 for a study conducted by Kline and Warren (1981), two nursing faculty members at Michigan State University. The data-collection procedures followed by Kline and Warren are described below.

To secure an adequate subject pool, physicians and agencies with potential contacts with MI patients were identified by the investigators. A letter introducing the research project was sent to those identified requesting their participation. (See Appendix A.) Six physician offices (12 participating physicians) and a formal cardiac

rehabilitation program offered through the local community college responded to the request and agreed to provide names of potential subjects for the study.

In each setting, the investigators met with the registered nurse designated by the physician as having primary responsibility for identifying patients appropriate for the study. The sample-selection criteria were discussed with the nurse at this time and a written copy of the criteria left at each office for reference. Ongoing contact was maintained with each office by the investigators at regular monthly intervals to ensure continuation of the established selection procedure and to provide a channel for feedback with the participating sites.

The nurse at each site selected male MI patients who met the study criteria. These men and their wives were then mailed a letter signed by the husband's physician inviting their participation in the study. (See Appendix B.) A postcard was enclosed in each letter for the couples to return to the investigators if they were interested in participating and/or receiving more information about the research study.

Couples who agreed to be contacted were telephoned by project members and the study explained. At this time, the couples were advised of the type of information asked in the questionnaires and the amount of time required to complete them. In addition, couples were informed that participation in the study was voluntary, would in no way interfere with the health care they received, and that they were free to withdraw at any time without jeopardizing their future health care.

Assurances of subject anonymity and the confidentiality of questionnaire responses were also made to all couples contacted.

Those couples who agreed to participate were then formally enrolled in the study and mailed consent forms, instruction letters, and two sets of questionnaires. Husbands and wives were instructed to complete the appropriate questionnaires separately and to "answer each question as honestly as possible." In addition, because the marital functioning instrument was designed to measure the husbands' and wives' current perceptions of their relationship, subjects were instructed to respond to each item based on their current feelings. (See instruction letter--Appendix C.)

Consent forms and completed questionnaires were returned to the investigators by mail in an envelope provided for this purpose and stored until data from the first 50 couples were received. At that time, the data were coded on Fortran coding sheets, keypunched, and logged into the computer to prepare for data analysis. Concomitantly, data from the second 46 couples were collected using the procedure described above. After the second set of questionnaires was received, the data were coded, keypunched, and logged into the computer. Data from the second 46 couples were analyzed separately to provide a cross-validation sample.

Operationalization of Study Variables

Perceived Marital Functioning

Perceived marital functioning was measured using a 42-item instrument (Kline & Warren, 1981). The items were used to operationalize the five dimensions of Adaptability, Partnership, Growth, Affection, and Resolve (APGAR) conceptualized by Smilkstein (1978). Definitions and sample items for each dimension are shown in Table 4.1.

Table 4.1: Definitions and Sample Statements for APGAR Dimensions.

APGAR Dimension/Definition (Smilkstein, 1981)	Sample Questionnaire Statement
ADAPTABILITY: Utilization of intrafamilial and extrafamilial resources for problem-solving when family equilibrium is stressed during a crisis.	My husband/wife is able to support me during rough times.
PARTNERSHIP: Sharing of decision-making and nurturing responsibilities by family members.	On matters of concern to both of us, I feel we make decisions together.
GROWTH: Physical and emotional maturation and self-fulfillment achieved by family members through mutual support and guidance.	I feel I am free to grow as an individual.
AFFECTION: Caring or loving relationships existing among family members.	I enjoy being physically close to my husband/wife.
RESOLVE: Commitment to devote time to other members of the family for physical and emotional nurturing usually involving decision to share space and money.	It is difficult for me to make time for family activities.

The marital functioning items are in statement form and are designed to tap both the respondent's perception of marital functioning post-myocardial infarction and the respondent's view of the partner's perception. Sample questions demonstrating how self-perception and perception of spouse were measured are shown below:

> I find our sex life satisfying since my husband's heart attack. (Item 26)
>
> My husband finds our sex life satisfying since his heart attack. (Item 36)

Questionnaires for the husbands and wives contained identical items with appropriate gender adaptation for the two perspectives. (See Appendix D, Instrument 1.)

Perceived Resources

Perceived social, cultural, religious, and medical resources are measured by use of five items included in the sociodemographic questionnaire. One item is included for each of cultural, religious, and medical resources, and two items for social resources. Items are based on dimensions of Smilkstein's (1978) family SCREEM resources and are designed to tap the husbands' and wives' perceptions of the adequacy of the husband's resources post-myocardial infarction. Definitions and sample items for each resource dimension are depicted in Table 4.2. Questionnaires for the husbands and wives contained identical resource items with appropriate gender adaptation for the two perspectives. (See Appendix D, Instrument 2.)

Table 4.2: Definitions and Sample Statements for Social, Cultural, Religious, and Medical Resource Dimensions

RESOURCE DIMENSION/DEFINITION (Smilkstein, 1978)	SAMPLE QUESTIONNAIRE STATEMENT
SOCIAL:	
Interaction is evident among family members. Family members have well-balanced lines of communication within areas of extrafamilial social interaction such as friends, support groups, clubs, and other community organizations.	Socializing with friends is an important part of my husband's life.
CULTURAL:	
Pride or satisfaction can be identified, especially in distinct ethnic groups.	My husband has cultural traditions which are a support to him.
RELIGION:	
Offers satisfying spiritual experiences as well as contacts with an extrafamilial support group.	My husband's religion is a source of comfort and support during difficult times.
MEDICAL:	
Care is available through channels that are easily established and have previously been experienced satisfactorily.	My husband is able to make contact with his doctor easily when he needs medical attention.

Source: Kline and Warren (1980).

Hypotheses

The following hypotheses were tested in this study:

Husbands

1. There is no relationship between the husband's perception of the importance of his social contacts and his perception of marital functioning after the MI.

2. There is no relationship between the husband's perception of the limitation of his social contacts and his perception of marital functioning after the MI.

3. There is no relationship between the husband's perception of his cultural resources and his perception of marital functioning after the MI.

4. There is no relationship between the husband's perception of his religious resources and his perception of marital functioning after the MI.

5. There is no relationship between the husband's perception of his medical resources and his perception of marital functioning after the MI.

Wives

6. There is no relationship between the wife's perception of the importance of her husband's social contacts and her perception of marital functioning after the MI.

7. There is no relationship between the wife's perception of the limitation of her husband's social contacts and her perception of marital functioning after the MI.

8. There is no relationship between the wife's perception of her husband's cultural resources and her perception of marital functioning after the MI.

9. There is no relationship between the wife's perception of her husband's religious resources and her perception of marital functioning after the MI.

10. There is no relationship between the wife's perception of her husband's medical resources and her perception of marital functioning after the MI.

Husbands and Wives

11. There is no difference in the husbands' and wives' perceptions of the importance of the husband's social contacts after the MI.

12. There is no difference in the husbands' and wives' perceptions of the limitation of the husband's social contacts after the MI.

13. There is no difference in the husbands' and wives' perceptions of the husband's cultural resources after the MI.

14. There is no difference in the husbands' and wives' perceptions of the husband's religious resources after the MI.

15. There is no difference in the husbands' and wives' perceptions of the husband's medical resources after the MI.

16. There is no difference in the husbands' and wives' perceptions of marital functioning after the MI.

Development of the Instruments

Marital Functioning Instrument

The marital functioning instrument and resource items used in this study were developed by Kline and Warren (1982). Kline and Warren conducted a research study to establish the reliability and validity of eight scales designed to measure the husband's and wife's perceptions of (a) the post-myocardial infarction rehabilitation regimen, (b) adherence to the health regimen, (c) responsibility for adherence to the health regimen, and (d) the level of function in the marital dyad. Development of the marital functioning instrument and sociodemographic questionnaire are discussed below.

In the process of tool development, Kline and Warren (1982) examined a variety of scales designed to operationalize the broad

construct of marital relationship. Kline and Warren's (1982) instrument to measure marital functioning was based on work by Pless and Satterwhite (1973), Tapia (1972), and Smilkstein (1978). Items were included which tapped the husband's and wife's perceptions of the couple's internal resources such as problem solving, cohesiveness and reciprocity, as well as sexual relationships and marital distress.

Originally, each item was formulated to fit one of the five dimensions of Smilkstein's (1978) family APGAR (Adaptation, Partnership, Growth, Affection, Resolve). Items are in statement form followed by a 6-point Likert scale, "strongly agree" to "strongly disagree." For example:

I feel my husband accepts my feelings. (Item 41)

strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

The level of perceived marital functioning was determined by assigning a numerical score to each point of the Likert scale. For example:

I feel we make a good couple. (Item 42)

6	5	4	3	2	1
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

For those items indicating negative responses, the scoring was reflected as follows:

Since my husband's heart attack, I am unable to talk openly with my husband about things that bother me. (Item 38)

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

Thus, positive responses received a high numerical score for "strongly agree," while negative responses received a low numerical score for "strongly agree."

Subjects received a single score for the total instrument to indicate perceived level of marital functioning. High scores reflected a high level of functioning, while low scores reflected a low level of functioning.

Resource Items

The items measuring social, cultural, religious, and medical resources were developed by Kline and Warren (1982) as part of the sociodemographic questionnaire using Smilkstein's (1978) family SCREEM resource dimensions as a base. Husbands' and wives' perceptions of both internal resources (cultural, religious) and external resources (medical, religious, social) are tapped by the items.

Resource items are in statement form, followed by a 6-point Likert scale, "strongly agree" to "strongly disagree." For example:

My husband has cultural traditions which are a support to him. (Item 27)

strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

The level of perceived social, cultural, religious, and medical resources was ascertained by assigning a numerical score to each point of the Likert scale. For example:

Socializing with friends is an important part of my husband's life. (Item 29)

6	5	4	3	2	1
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

Only one of the resource items indicated a negative response (Item 30). For this item, the assigned numerical score was reflected as follows:

Since his heart attack, it has been necessary for my husband to limit socializing with friends. (Item 30)

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

Subjects received a single score for each of the resource items. High scores reflected a high level of resources, while low scores indicated a low level of resources.

Numerous other variables affecting the couple's perception of the myocardial infarction experience were also included in the sociodemographic questionnaire. Education and occupation of each spouse, income level of the couple, perceived job-related stress, and living arrangements are found in the instrument. Additional questions are included regarding the couple's perception of the severity of the husband's heart attack, discharge teaching received by the husband in the

hospital, participation in a rehabilitation program, the husband's current activity level, the husband's use of alcohol and tobacco before his MI, the presence of chronic health problems, and the occurrence of other significant life events during the past year.

Items from the sociodemographic questionnaire were used in this study to describe the characteristics of the sample. In addition, potential relationships between the husband's and wife's perceptions of marital functioning and other variables affected by the MI experience were explored.

Reliability and Validity of the Marital Functioning Instrument

Reliability refers to the degree of consistency with which an instrument measures the underlying attribute it is designed to measure. The reliability of an instrument can be assessed by determining its stability, internal consistency, and equivalence (Polit & Hungler, 1983).

The validity of an instrument refers to the degree to which the instrument measures what it is intended to measure. Three primary types of validity can be identified: content validity, criterion-related validity, and construct validity (Polit & Hungler, 1983). In evaluating the marital functioning instrument, Kline and Warren (1982) used measures of content validity.

Content validity is based on judgment regarding the sampling adequacy of the content area being measured (Polit & Hungler, 1983). For the marital functioning instrument, content validity was evaluated based on review of pertinent literature by Kline and Warren. In

addition, the completed instrument was reviewed by a Clinical Nurse Specialist and a family psychiatrist with expertise in the area of family theory. The evaluators determined the marital functioning instrument to be congruent with the hypothetical construct of marital functioning.

Initial tests of reliability and construct validity were attempted by Kline and Warren using data from the first 50 couples, but the findings were inconclusive. The results are not of value for the present study and thus are not included here. For the purpose of this study, reliability and validity testing were completed using data from 98 couples. The results of the analysis are presented in Chapter V.

Statistical Analysis

Sociodemographic data were analyzed using descriptive statistics in order to describe and summarize the sample characteristics. Frequencies, percentages, and measures of central tendency (the mean) were applied as appropriate. Results of the data analysis are presented in Chapter V.

Analysis of the marital functioning instrument and resources items required several steps. These are presented below.

Since final tests of reliability and construct validity had not been completed for the marital functioning instrument by Kline and Warren, the first step involved such a testing of the husbands' and wives' scores using the entire sample of 98 couples. An oblique multiple-group factor analysis was computed for the husbands and wives separately using pair-wise deletion of missing data. Factor analysis

is a statistical procedure whereby clusters representing a unitary attribute are identified and grouped together. The purpose of factor analysis is to reduce a large group of variables into a smaller set of measures which are conceptually unified. The underlying dimensionality of a large number of measures can thus be elucidated (Polit & Hungler, 1983). Factored items were examined to ensure that the contents of item clusters were indicators of the underlying construct.

The internal consistency of the item clusters was then obtained by computing Cronbach's alpha. Cronbach's alpha is a measure of the extent to which the subparts of an instrument measure the same attribute. Calculation of a coefficient alpha produces a reliability coefficient ranging in value from 0.0 to +1.00 with higher values indicating a greater degree of internal consistency (Polit & Hungler, 1983).

Testing for external consistency involved examining the intercorrelation of items in one cluster with items in other clusters to determine the degree of overlap between the scales. Items were deleted based on internal and external consistency criteria to obtain an appropriate measure of marital functioning. Results of reliability and validity testing for the marital functioning instrument are presented in Chapter V.

It was not known whether the subjects would perceive social, cultural, religious, and medical resources as a unidimensional or as multidimensional constructs. Thus, to determine the underlying dimensionality of the resource items, a correlation matrix was computed for

husbands and wives separately. Results of this analysis are discussed in Chapter V.

Following initial analysis of the marital functioning instrument and resource items, the hypothesized relationships between marital functioning and social, cultural, religious, and medical resources (Hypothesis 1-10) were tested using correlation and regression statistics. Each of these procedures is discussed below.

A correlation matrix was computed using the Pearson r (the product-moment correlation coefficient) to determine the extent of relationship between marital functioning and each resource item. The Pearson r is a numerical index, appropriate for use with Likert-type scales, which expresses the direction and magnitude of the relationship between two variables. Correlation coefficient values range from -1.0 (a perfect negative relationship) to +1.0 (a perfect positive relationship). Values of 0.0 indicate that no relationship exists between the variables (Polit & Hungler, 1983). The correlations computed between the study variables were interpreted based on the following criteria (Borg & Gall, 1979):

< .20	No relationship
.20-.35	Slight relationship
.35-.65	Moderate relationship
.65-.85	Strong relationship
> .85	Very strong relationship

In addition to its usefulness as a descriptive statistic, the Pearson r has value as an inferential statistic for the testing of hypotheses regarding the significance of the correlations between variables (Polit & Hungler, 1983). A .05 level of significance was set

in this study to determine whether or not the null hypotheses (Hypotheses 1-10) would be accepted or rejected. A summary of the correlations is found in Chapter V.

Regression statistics were used to further analyze the data from the marital functioning instrument and resource items. Regression analysis was done to determine how much of the variance in the variable, marital functioning, could be accounted for by the combined influence of the relevant independent variables (the four resource dimensions and other sociodemographic factors). Multiple regression analysis was also done to assess which combination of resource dimensions best predicted marital functioning and to determine the relative importance of each predictor (Polit & Hungler, 1983). Data from the regression analyses are presented in Chapter V.

To compare the husbands' and wives' perceptions of marital functioning and perceptions of the husband's social, cultural, religious, and medical resources (Hypotheses 11-16), *t*-tests for paired samples were computed using a .05 level of significance. The *t*-test is a parametric statistic used for testing the differences between group means on a specified variable (Polit & Hungler, 1983). Discussion of results for the *t*-tests is presented in Chapter V.

Protection of Human Subjects

Kline and Warren's study protocol was approved by UCRIHS at Michigan State University and the Ingham Medical Center Committee on Research Involving Human Subjects. Informed consent was obtained from all participants before enrolling them in the study. An investigator's

statement and consent form were mailed to all subjects with the questionnaire packet. The consent form was to be signed before completing the questionnaires and returned to the investigators with the packet.

The investigator's statement included the following information: (a) a brief explanation of the purpose of the study, (b) the kinds of information included in the questionnaires, (c) the amount of time required of subjects, and (d) assurance to participants that their rights to privacy, confidentiality, continuing care from their physician, and the freedom to withdraw at any time would be maintained. Copies of the investigator's statement and consent form are found in Appendix E.

Insofar as the data collected by Kline and Warren had been coded and entered into the computer before initiation of the present research, the data could not be traced. The researcher had access to the data in coded form only. No further risks to the subjects were identified from the present study.

Summary

In this chapter, the research methodology and design used in the study were discussed. The study variables, perceived marital functioning and perceived resources, were defined operationally. Development of the instruments used to measure the concepts was described, including the testing of the marital functioning instrument for reliability and validity. Research hypotheses were presented, and the statistics used to analyze the data were delineated. A description of the sample

population and the procedures to protect the rights of human subjects were also included in this chapter.

A discussion of the research findings is provided in Chapter V. The sociodemographic characteristics of the sample are delineated. Results obtained for each of the hypotheses are presented. In addition, the reliability and construct validity of the marital functioning instrument using the total sample of 98 couples is explicated.

CHAPTER V

DATA ANALYSIS

Overview

In this chapter the study sample is described and data are presented to delineate the relationships between perceived social, cultural, religious, and medical resources and perceived marital functioning in the husband and wife post-myocardial infarction. Tests of reliability for the marital functioning instrument and resource items are discussed. In addition, data are presented comparing the mean scores of husbands and wives for marital functioning and each of the five resource items. A convenience sample of 98 couples in which the husband had experienced a myocardial infarction comprised the study sample. Data from these couples were analyzed to test the following hypotheses:

Husbands

1. There is no relationship between the husband's perception of the importance of his social contacts and his perception of marital functioning after the MI.
2. There is no relationship between the husband's perception of the limitation of his social contacts and his perception of marital functioning after the MI.
3. There is no relationship between the husband's perception of his cultural resources and his perception of marital functioning after the MI.

4. There is no relationship between the husband's perception of his religious resources and his perception of marital functioning after the MI.

5. There is no relationship between the husband's perception of his medical resources and his perception of marital functioning after the MI.

Wives

6. There is no relationship between the wife's perception of the importance of her husband's social contacts and her perception of marital functioning after the MI.

7. There is no relationship between the wife's perception of the limitation of her husband's social contacts and her perception of marital functioning after the MI.

8. There is no relationship between the wife's perception of her husband's cultural resources and her perception of marital functioning after the MI.

9. There is no relationship between the wife's perception of her husband's religious resources and her perception of marital functioning after the MI.

10. There is no relationship between the wife's perception of her husband's medical resources and her perception of marital functioning after the MI.

Husbands and Wives

11. There is no difference in the husbands' and wives' perceptions of the importance of the husband's social contacts after the MI.

12. There is no difference in the husbands' and wives' perceptions of the limitation of the husband's social contacts after the MI.

13. There is no difference in the husbands' and wives' perceptions of the husband's cultural resources after the MI.

14. There is no difference in the husbands' and wives' perceptions of the husband's religious resources after the MI.

15. There is no difference in the husbands' and wives' perceptions of the husband's medical resources after the MI.

16. There is no difference in the husbands' and wives' perceptions of marital functioning after the MI.

Descriptive Findings of the Study Sample

Data from the sociodemographic questionnaire were used to describe the sample characteristics. Subjects were asked to respond to items in three categories: (a) sociodemographic information, (b) clinical status of the husbands post-MI, and (c) other potential factors influencing marital functioning post-MI. Findings in each of these categories are discussed below.

Sociodemographic

The sample consisted of 98 English-speaking males who had experienced a myocardial infarction within the past year and their legally married spouses. With the exception of one husband who reported his ethnic background as Indian, all husbands and wives were white. There were two cases of missing data for the wives.

Male subjects ranged in age from 40 to 74 years, with a mean age of 56.4 years. The wives ranged in age from 28 to 72 years. Mean age for the wives was 53.7 years. Two of the wives failed to report their ages on the questionnaire. The age distributions and percentages for husbands and wives are presented in Tables 5.1 and 5.2, respectively.

Table 5.1: Age Range Distribution of Husbands (N = 98)

Age Range	Number	Percent
40-44	6	6.1
45-49	15	15.3
50-54	15	15.3
55-59	29	29.6
60-64	21	21.4
65-69	7	7.1
70-74	5	5.2
Total	98	100.0

Table 5.2: Age Range Distribution of Wives (N = 96)

Age Range	Number	Percent
25-29	1	1.0
30-34	0	0.0
35-39	7	7.3
40-44	5	5.2
45-49	16	16.6
50-54	17	17.7
55-59	25	26.2
60-64	17	17.7
65-69	5	5.2
70-74	3	3.1
Total	96	100.0

Years of marriage of the couples as reported by the husbands ranged from 1 to 48 years. The mean years of marriage was 29.8 years. There was one case of missing data. Distribution for years of marriage is shown in Table 5.3.

Table 5.3: Distribution of Years of Marriage as Reported by Husbands (N = 97)

Years of Marriage	Number	Percent
1-10	9	9.3
11-20	11	11.3
21-30	17	17.5
31-40	51	52.6
41-50	9	9.3
Total	97	100.0

The number of children of the couples as reported by the husbands ranged from 0 to 13, as can be seen in Table 5.4. The mean number of children per couple was 3.7. There were seven cases of missing data.

Table 5.4: Number of Children as Reported by Husbands (N = 91)

Number of Children	Number	Percent
0	2	2.0
1	8	9.0
2	16	18.0
3	27	30.0
4	15	16.0
5	6	7.0
6	6	7.0
7	4	4.0
8	2	2.0
9	1	1.0
10	3	3.0
13	1	1.0
Total	91	100.0

Fifty-eight of the husbands (59%) reported that they had no children living at home, while the remainder of the husbands (N = 40) reported from one to five children still living at home. For the total sample, the mean number of children living at home was less than one child. A summary of the data is shown in Table 5.5.

Table 5.5: Number of Children Living at Home as Reported by Husbands (N = 98)

Number of Children	Number	Percent
0	58	59.2
1	20	20.4
2	10	10.2
3	6	6.1
4	3	3.1
5	1	1.0
Total	98	100.0

One of the husbands and three of the wives did not respond to the question regarding educational level. Of the remainder of the husbands and wives, levels of education ranged from "junior high school" to "beyond four years of college." Distributions of husbands and wives according to level of education are summarized in Table 5.6.

Work status was obtained from the husbands and wives separately. Fifty of the husbands (51%) and 43 of the wives (43.9%) reported they were currently working outside the home. Of the remainder of the sample, 47 husbands (48%) and 53 wives (54.1%) were not working. In

addition, one husband and two wives failed to answer the item on work status.

Table 5.6: Educational Levels of Husbands (N = 97) and Wives (N = 95)

Level of Education	Husbands		Wives	
	Number	Percent	Number	Percent
Less than 7 years school	0	0.0	0	0.0
Junior high school	7	7.2	4	4.2
Partial high school	10	10.3	11	11.6
High school graduate	39	40.2	45	47.4
Partial college	23	23.7	21	22.1
College graduate	8	8.2	6	6.3
Beyond 4 years college	10	10.4	8	8.4
Total	97	100.0	95	100.0

A total of 94 husbands and 72 wives responded to the question regarding current occupation. This is a larger number of both husbands and wives than reported that they were presently working outside the home. Twenty-two of the husbands and seven of the wives, however, listed their occupation as retired, which may account for the discrepancy. Further, it is possible that some of the husbands and wives had not yet returned to work after the MI but planned to do so in the future. A summary of the distributions of occupations for both husbands and wives is found in Table 5.7.

Eighty-four of the husbands and 67 of the wives responded to the question regarding work-related stress. Reported levels of stress ranged from "high" to "none" for both husbands and wives. Distributions

and percentages of stress associated with subjects' work are shown in Table 5.8.

Table 5.7: Frequency Distribution of Occupations for Husbands (N = 94) and Wives (N = 72)

Occupation	Husbands		Wives	
	Number	Percent	Number	Percent
Clerical	2	2.1	13	18.1
Professional	13	13.8	14	19.4
Executive	11	11.7	2	2.8
Skilled worker	18	19.2	0	0.0
Semi-skilled/unskilled worker	7	7.4	3	4.2
Own business	6	6.4	3	4.2
Retired	22	23.4	7	9.7
Unemployed, but looking for work	1	1.1	1	1.4
Other	14	14.9	29	40.3
Total	94	100.0	72	100.0

Table 5.8: Frequency Distribution of Stress Associated With Job for Husbands (N = 84) and Wives (N = 67)

Amount of Stress	Husbands		Wives	
	Number	Percent	Number	Percent
High	21	25.0	14	20.9
Medium	37	44.1	26	39.8
Low	17	20.2	22	32.8
None	9	10.7	5	7.5
Total	84	100.0	67	100.0

Three of the husbands failed to respond to the question regarding their total combined income yearly. Subjects' incomes ranged from under $9,999 to over $80,000 yearly. The majority of husbands (76%) reported incomes of $20,000-$29,999 or more yearly. A summary of distributions and percentages for combined annual income is presented in Table 5.9.

Table 5.9: Frequency Distribution of Combined Annual Income as Reported by Husbands (N = 95)

Income	Number of Couples	Percent
$0-$9,999	8	8.4
$10,000-$19,999	12	12.6
$20,000-$29,999	28	29.5
$30,000-$39,999	17	17.9
$40,000-$49,999	19	20.0
$50,000-$59,999	2	2.1
$60,000-$69,999	2	2.1
$70,000-$79,999	3	3.2
$80,000 and over	4	4.2
Total	95	100.0

Clinical Status of the Husbands Post-Myocardial Infarction

To provide a description of the husbands' clinical status post-myocardial infarction, husbands were asked to respond to the following items: (a) number of months since the MI, (b) previous hospitalizations for an MI, (c) severity of the MI, (d) current activity level, (e) presence of other chronic diseases, (f) adherence to a special

diet, (g) participation in teaching programs before hospital discharge, and (g) current participation in an organized heart education program. Husbands' responses to each of these areas are presented below.

Three of the husbands failed to respond to the item regarding length of time since the MI. For the remainder of the sample, answers ranged from 0 to 12 months, with a mean of 5.3 months. Frequency distribution for number of months since the MI is shown in Table 5.10.

Table 5.10: Distribution for Length of Time in Months Since Husband's MI (N = 95)

Time in Months	Number	Percent
1	5	5.3
2	14	14.7
3	12	12.6
4	16	16.8
5	9	9.5
6	6	6.3
7	10	10.5
8	5	5.3
9	6	6.3
10	5	5.3
11	4	3.2
12	3	4.2
Total	95	100.0

A total of 28 husbands (29%) reported they had been hospitalized more than one time for a heart attack. The remaining 70 husbands (71%) denied being previously hospitalized for an MI.

Four of the husbands did not respond to the item regarding perceived severity of their MI. Responses for the remainder of the

husbands ranged from "Very severe; I have a lot of heart damage" to "I have no heart damage." A summary of distributions and percentages for severity of the MI is presented in Table 5.11.

Table 5.11: Distribution of Husbands' Perceptions of Severity of the MI (N = 98)

Severity	Number	Percent
Very severe	30	32.0
Moderately severe	35	37.2
Mild	22	23.4
None	7	7.4
Total	94	100.0

Current physical activity level was obtained from all 98 husbands. None of the husbands reported being either completely disabled or capable of only limited self-care. The distributions and percentages of the husbands' current activity levels are presented in Table 5.12.

Table 5.12: Distribution of Husbands' Current Physical Activity Level (N = 98)

Activity Level	Number	Percent
Capable of all self-care	17	17.3
Restricted in physically strenuous activity only	54	55.1
Fully active	27	27.6
Total	98	100.0

Ninety-seven of the husbands responded to the question regarding presence of chronic health problems. A total of 47 husbands (48%) reported having chronic health problems, while 50 husbands (51%) denied having such problems. A summary of distributions for specific chronic diseases reported by the husbands is found in Table 5.13.

Table 5.13: Distribution of Other Chronic Diseases Reported by Husbands (N = 47)

Disease	Number
Cancer	1
Hypertension	16
Lung disease	11
Diabetes mellitus	6
Arthritis	12
Other	19

In answer to the question regarding whether they follow a special diet, 87 husbands (89%) responded in the affirmative. The remaining 11 husbands (11%) denied following a special diet.

Two husbands failed to respond to the question regarding participation in a cardiac education program during hospitalization for the MI. Seventy of the husbands (71%) stated they had participated in such a teaching program, while 26 husbands (27%) stated they had not. A total of 48 husbands (49%) stated that the program had included instruction on ways of dealing with problems that could develop at home. In addition, 23 of the husbands (23%) reported that they were

currently participating in an organized cardiac program. The remaining 75 husbands denied participating in such a program.

Other Potential Factors Influencing Marital Functioning Post-Myocardial Infarction

Information regarding the husband's use of alcohol and cigarettes before the MI and the occurrence of other life events during the year before completing the questionnaire were obtained from the subjects as these factors were thought to have the potential for affecting the couple's perception of marital functioning post-MI.

Seventy-one of the husbands (72%) reported they drank alcoholic beverages before the MI, while 24 husbands (24%) stated they did not use alcohol. There were data missing on three individuals. Husbands were also asked how much they drank before the MI. Distributions and percentages for the amount of alcohol consumed are shown in Table 5.14.

Table 5.14: Distribution of Amount of Alcohol Consumed by Husbands before the MI (N = 71)

Amount	Number	Percent
Occasional	37	52.1
Weekends only	5	7.0
Several times weekly	13	18.3
1 or 2 drinks daily	9	12.7
2 to 5 drinks daily	6	8.5
More than 5 drinks daily	1	1.4
Total	71	100.0

Two of the husbands failed to respond to the question regarding smoking before the MI. Of the remainder of the husbands, 49 (50%) stated they had smoked before the infarct and 47 (48%) denied a history of smoking. A summary of distributions and percentages for the amount smoked before the MI is presented in Table 5.15.

Table 5.15: Distribution of Amount Smoked by Husbands Before the MI (N = 48)

Amount	Number	Percent
< .5 pack/day	3	6.2
.5—1 pack/day	12	25.0
1—1.5 packs/day	9	18.8
1.5-2 packs/day	14	29.2
> 2 packs/day	10	20.8
Total	48	100.0

Husbands were asked to record life events that had occurred in their families in the year before completing the questionnaire. Number of husbands reporting in each category of life events is shown in Table 5.16.

Table 5.16: Life Events Occurring in Family During the Past Year as Reported by Husbands

Event	Number
Menopause	3
Pregnancy	2
Addition in household	5
Retirement	13
Moving	9
Marital problems	2
Divorce or separation	0
Major sickness in the family	25
Death of close friend or family member	14
Laid off or fired from work	6
Concern over aged parents	23
Change in work hours	18

Reliability of the Instruments

Marital Functioning

To ascertain the construct validity and reliability of the marital functioning instrument, the following procedure was completed. Using items formulated for each of the five APGAR dimensions, an inter-item correlation matrix was computed for the husbands and wives separately using pair-wise deletion of missing data. Oblique multiple-group factor analysis was then applied to each matrix. Various factor solutions were attempted using from one to five scales. Items were examined to insure that the contents of item clusters were indicators of the underlying construct. The internal consistency of the item clusters was evaluated using coefficient alpha. Testing for external consistency involved examining the intercorrelation of items in one

cluster with items in other clusters to determine the degree of overlap between the scales. Items were deleted based on failure to evidence adequate internal and external consistency to obtain an appropriate measure of marital functioning.

The five scales (Adaptation, Partnership, Growth, Affection, and Resolve) (Smilkstein, 1978) conceptualized by Kline and Warren (1981) during tool development were not validated by the factor analyses. Instead a single scale was identified for both the husbands and wives, consisting of 24 items. The alpha coefficient for this scale was .91 for the husbands and .94 for the wives, indicating a high degree of interrelationship among the items. At least two items from each APGAR dimension are contained in the instrument. The 24-item scale is found in Appendix G.

Resource Items

To assist in determining the underlying dimensionality of the five resource items, correlation matrices were computed for the husbands and wives separately. Several significant correlations were found for both husbands and wives. For wives, the cultural resource item was most highly correlated with religion (r = .47, p = .001) and importance of social contacts (r = .33, p = .001). The strongest correlations for the husbands were found between religion and cultural resources (r = .37, p = .001) and also religion and importance of social contacts (r = .49, p = .001). Correlation coefficients computed between the resource

items for husbands and wives are presented in Table 5.17 and 5.18, respectively.

Table 5.17: Correlation Matrix for Resource Items (Wives) Using the Pearson r

	Medical	Cultural	Religious	Importance of Social Contacts	Limitation of Social Contacts
Medical	1.00				
Cultural	.10	1.00			
Religious	-.12	.47* (p=.001)	1.00		
Importance of social contacts	.29* (p=.002)	.33* (p=.001)	.19* (p=.03)	1.00	
Limitation of social contacts	.07	-.10	-.04	-.09	1.00

*Statistically significant at $p < .05$ level.

Highly correlated items were content analyzed to determine if the underlying constructs measured by items were similar. Based on content analysis and the diversity of correlations among the items, the decision was made to treat the resource items as separate indicators rather than as a single scale.

Table 5.18: Correlation Matrix for Resource Items (Husbands) Using the Pearson r

	Medical	Cultural	Religious	Importance of Social Contacts	Limitation of Social Contacts
Medical	1.00				
Cultural	.04	1.00			
Religious	.19* (p=.028)	.37* (p=.0001)	1.00		
Importance of social contacts	.22* (p=.015)	.21* (p=.02)	.49* (p=.001)	1.00	
Limitation of social contacts	.04	-.05	.10	.09	1.00

*Statistically significant at $p < .05$ level.

Data Presentation for Hypotheses

The goal of this study was to describe the relationship between perceived social, cultural, religious, and medical resources and perceived marital functioning in the husband and wife post-myocardial infarction. To analyze the degree and direction of relationship between the variables, correlation coefficients were computed using the Pearson product-moment correlation coefficient. Null hypotheses were accepted or rejected based on the significance level of the relationship between variables. The minimum acceptable level of significance set for this study was .05.

A secondary goal of the study was to compare the husbands' and wives' perceptions of each resource item and marital functioning after

the MI. _T_-tests for paired samples were computed to determine differences in the mean marital functioning scores and the mean resource scores of husbands and wives. The null hypothesis was accepted or rejected based on significant differences in mean scores for the two groups.

In this section each research question and its associated hypotheses are presented, followed by pertinent findings for the hypotheses. Levels of significance computed for each hypothesis are provided and a statement made regarding acceptance or nonacceptance of the null hypothesis.

Research Question 1

Is there a relationship between the husband's perception of his resources (social, cultural, religious, and medical) and his perception of marital functioning after the MI?

Hypothesis 1: There is no relationship between the husband's perception of the importance of his social contacts and his perception of marital functioning after the MI.

A correlation coefficient of .21 (p = .025) was computed between the husband's marital functioning and importance of social contacts scores. The null hypothesis was therefore rejected. There is a significant relationship between importance of social contacts and marital functioning for the husbands.

Hypothesis 2: There is no relationship between the husband's perception of limitation of social contacts and his perception of marital functioning after the MI.

The correlation between the husband's limitation of social contacts score and marital functioning score was .23 (p = .014). Because the level of significance surpassed the acceptable limit set for this study, the null hypothesis was rejected. There is a significant relationship between the husband's limitation of social contacts and marital functioning after the MI.

Hypothesis 3: There is no relationship between the husband's perception of cultural resources and his perception of marital functioning after the MI.

A correlation coefficient of .03 (p = .39) was computed between the husband's cultural resources score and marital functioning score. The level of significance was below the established limit and the null hypothesis was not rejected.

Hypothesis 4: There is no relationship between the husband's perception of religious resources and his perception of marital functioning after the MI.

The correlation between the husband's religious resources score and marital functioning score was .37 (p = .001). A significant relationship was thus found between religious resources and marital functioning for the husband. The null hypothesis was rejected.

Hypothesis 5: There is no relationship between the husband's perception of medical resources and his perception of marital functioning after the MI.

A correlation coefficient of .26 (p = .007) was computed between medical resources and marital functioning for the husbands, and the null hypothesis was therefore rejected. There is a significant

relationship between the husband's medical resources and his perception of marital functioning after the MI.

A summary of correlations between marital functioning and the five resource items for the husbands is presented in Table 5.19.

Table 5.19: Correlations of Marital Functioning and the Five Resource Items for the Husbands Using the Pearson *r*

Resource Item	Correlation
Importance of social contacts	.21*
Limitation of social contacts	.23*
Cultural	.03
Religious	.37**
Medical	.26**

*$p < .05$.

**$p < .01$.

Research Question 2

Is there a relationship between the wife's perception of her husband's resources (social, cultural, religious, and medical) and her perception of marital functioning after the MI?

Hypothesis 6: There is no relationship between the wife's perception of the importance of her husband's social contacts and her perception of marital functioning after the MI.

The correlation between the wife's importance of social contacts score and marital functioning score was .33 ($p = .001$). A significant relationship was therefore found to exist between the variables, and the null hypothesis was rejected.

Hypothesis 7: There is no relationship between the wife's perception of the limitation of her husband's social contacts and her perception of marital functioning after the MI.

A correlation coefficient of .02 (p = .43) was computed between limitation of social contacts and marital functioning for the wives. The null hypothesis was not rejected as an acceptable level of significance was not achieved.

Hypothesis 8: There is no relationship between the wife's perception of her husband's cultural resources and her perception of marital functioning after the MI.

The correlation between the wife's cultural resources score and marital functioning score was .32 (p = .002). A significant relationship was found between cultural resources and marital functioning for the wife. The null hypothesis was therefore rejected.

Hypothesis 9: There is no relationship between the wife's perception of the husband's religious resources and her perception of marital functioning after the MI.

A correlation coefficient of .29 (p = .004) was computed for the wife's religious resources score and marital functioning score. The null hypothesis was rejected as a significant relationship was found between the variables.

Hypothesis 10: There is no relationship between the wife's perception of the husband's medical resources and her perception of marital functioning after the MI.

The correlation between the wives' medical resources score and marital functioning score was .53 (p = .001). There is a significant relationship between medical resources and marital functioning for the wives. The null hypothesis was thus rejected.

In Table 5.20, the correlations computed between marital functioning and the five resource items for the wives are recorded.

Table 5.20: Correlations of Marital Functioning and the Five Resource Items for the Wives Using the Pearson *r*

Resource Item	Correlation
Importance of social contacts	.33**
Limitation of social contacts	.02
Cultural	.32*
Religious	.29*
Medical	.53**

*$p < .01$.

**$p < .001$.

Research Question 3

How do husbands' and wives' perceptions of the husband's social, cultural, religious, and medical resources and their perceptions of marital functioning compare after the MI?

Hypothesis 11: There is no difference in the husbands' and wives' perceptions of the importance of the husband's social contacts after the MI.

The mean importance of social contacts score was 4.50 for the husbands and 4.24 for the wives. Computation of a *t*-test for paired samples indicated that the difference between the two means was not significant ($t = -1.72$, $p = .09$). The null hypothesis was not rejected.

Hypothesis 12: There is no difference in the husbands' and wives' perceptions of the limitation of the husband's social contacts after the MI.

A mean limitation in social contacts score of 3.74 was obtained for the husbands. The mean score for the wives was 4.01. A t-value of 1.59 (p = .12) was obtained using a t-test for paired samples. No significant differences were found in the husbands' and wives' limitation in social contacts score, and the null hypothesis was not rejected.

Hypothesis 13: There is no difference in the husbands' and wives' perceptions of the husband's cultural resources after the MI.

The mean cultural resources score was 3.65 for the husbands and 3.47 for the wives. Computation of the t-test for paired samples indicated that there was no significant difference in mean scores of the two groups (t = -1.07, p = .29). The null hypothesis was not rejected.

Hypothesis 14: There is no difference in the husbands' and wives' perceptions of the husband's religious resources after the MI.

A mean religious resources score of 4.50 was obtained for the husbands and a score of 4.15 for the wives. Computation of a t-test for paired samples yielded a t-value of -2.57 (p = .01). There is a significant difference in the husbands' and wives' mean scores for religious resources, and the null hypothesis was thus rejected.

Hypothesis 15: There is no difference in the husbands' and wives' perceptions of the husband's medical resources after the MI.

The medical resources score was 4.89 for the husbands and 4.86 for the wives. No significant difference was found in group means using the *t*-test for paired samples ($t = -.16$, $p = .87$). The null hypothesis was not rejected.

Hypothesis 16: There is no difference in the husbands' and wives' perceptions of marital functioning after the MI.

A mean marital functioning score of 4.64 was obtained for the husbands and 4.43 for the wives. Computation of a *t*-test for paired samples yielded a *t*-value of -2.51 ($p = .014$). There was thus a significant difference in the mean marital functioning scores of the husbands and wives, and the null hypothesis was rejected.

Differences in the mean scores of husbands and wives for marital functioning and each resource item are shown in Table 5.21.

The findings for each hypothesis were presented in this section. No significant relationships were found between the variables in Hypotheses 3, 7, 11, 12, 13, and 15. The null hypotheses were not rejected. Significant relationships were found between variables in Hypotheses 1, 2, 4, 5, 6, 8, 9, 10, 14, and 16, however, and the null hypotheses were rejected. A summary of the results of hypothesis testing is shown in Table 5.22.

Table 5.21: Results of *t*-Tests for Husbands' and Wives' Scores for Marital Functioning and Each Resource Item

Variable	Mean	Mean Diff.	*t*-Value	*df*	Signif.
Marital functioning (W)	4.43	-.204	-2.51	73	.014*
Marital functioning (H)	4.64				
Medical (W)	4.86	-.027	-.16	73	.872
Medical (H)	4.89				
Cultural (W)	3.47	-.176	-1.07	73	.290
Cultural (H)	3.65				
Religious (W)	4.15	-.351	-2.57	73	.012*
Religious (H)	4.50				
Importance of social contacts (W)	4.24	-.257	-1.72	73	.089
Importance of social contacts (H)	4.50				
Limitation of social contacts (W)	4.01	.270	1.59	73	.117
Limitation of social contacts (H)	3.74				

(W) Wives
(H) Husbands

*Significant at $p < .05$.

Table 5.22: Summary of Acceptance and Nonacceptance of Null Hypotheses

	Hypothesis	Rejected	Not Rejected
1.	Husband's perception of importance of social contacts and marital functioning	X	
2.	Husband's perception of limitation of social contacts and marital functioning	X	
3.	Husband's perception of cultural resources and marital functioning		X
4.	Husband's perception of religious resources and marital functioning	X	
5.	Husband's perception of medical resources and marital functioning	X	
6.	Wife's perception of importance of husband's social contacts and marital functioning	X	
7.	Wife's perception of limitation of husband's social contacts and marital functioning		X
8.	Wife's perception of husband's cultural resources and marital functioning	X	
9.	Wife's perception of husband's religious resources and marital functioning	X	
10.	Wife's perception of husband's medical resources and marital functioning	X	
11.	Difference in couple's perceptions of importance of husband's social contacts		X
12.	Difference in couple's perceptions of limitation of husband's social contacts		X
13.	Difference in couple's perceptions of husband's cultural resources		X
14.	Difference in couple's perceptions of husband's religious resources	X	
15.	Difference in couple's perceptions of husband's medical resources		X
16.	Difference in couple's perceptions of marital functioning	X	

Other Findings

In addition to the five resource items, several other variables were found to be significantly correlated with marital functioning for both the husbands and wives. Correlations computed for these variables are presented below.

For the husbands, marital functioning was significantly correlated with three additional variables: the husband's rating of his wife's job-related stress, the husband's perception of his current activity level, and the husband's adherence to a special diet. A correlation of .20 (p = .047) was computed between the husband's marital functioning score and his rating of his wife's job-related stress. The husband's marital functioning score and rating of current activity level were correlated .21 (p = .025). Adherence to a special diet was correlated -.18 (p = .042) with marital functioning, indicating a slight negative relationship between the variables.

To determine which variables best predicted the husbands' marital functioning post-MI, a step-wise multiple regression was computed using the five resource items and the three additional variables discussed above. The religious resources item was found to be the single best predictor of the husbands' marital functioning (F = 11.16, p = .001), accounting for approximately 14% of the variance. The other significant predictors of the husbands' marital functioning were medical resources, diet, and limitation of social contacts. The combined influence of these variables accounted for approximately 27% of the variance in the husbands' marital functioning score post-myocardial

infarction. A summary of the significant predictors of the husbands' marital functioning is presented in Table 5.23.

Table 5.23: Significant Predictors of Husbands' Perceived Marital Functioning Based on Step-Wise Multiple Regression

Variable	B	F	Signif.
Religious resources	.191	8.39	.005
Limitation of social contacts	.119	4.54	.037
Adherence to special diet	-.498	5.19	.026
Medical resources	.123	4.08	.047

Additional significant correlations with the wives' marital functioning score included years of marriage, the wife's educational level, the wife's rating of the stress associated with both her job and her husband's job, the amount of alcohol consumed by her husband before the infarction, the husband's use of cigarettes before the infarct, occurrence of life events, the husband's current activity level, husband's following a special diet, and the wife's rating of the husband's current physical activity compared to his physical activity before the infarct. A summary of the correlations computed for these variables along with the levels of significance achieved is shown in Table 5.24.

A step-wise multiple regression was computed using the five resource items and the other variables described above to determine which of the variables best predicted marital functioning for the wives. The wife's perception of the husband's medical resources was the single best predictor of the wife's marital functioning score (F =

18.15, $p < .001$). Medical resources accounted for 28.3% of the variance in marital functioning. Other significant predictors of marital functioning for the wives included religious resources, life events, the husband's current activity level, and the husband's current physical activity in comparison to his activity before the MI. A summary of the significant predictors of the wives' marital functioning is presented in Table 5.25.

Table 5.24: Variables Significantly Correlated With Wives' Perceived Marital Functioning Using the Pearson r

Variable	Correlation	Level of Signif.
Life events	-.33	$p = .001$
Current activity vs. preinfarction activity	.24	$p = .014$
Years of marriage	.26	$p = .008$
Wife's education	-.21	$p = .029$
Wife's job stress	.29	$p = .012$
Husband's job stress	.22	$p = .036$
Current activity	.28	$p = .005$
Husband's adherence to special diet	-.28	$p = .006$
Husband's use of alcohol	-.32	$p = .006$
Husband's smoking	.22	$p = .024$

Table 5.25: Significant Predictors of Wives' Perceived Marital Functioning Based on Step-Wise Multiple Regression

Variable	B	F	Signif.
Medical resources	.346	18.26	< .001
Religious resources	.160	5.68	.022
Life events	-.155	6.11	.018
Current vs. previous physical activity	.188	7.43	.009
Current activity level	.368	5.74	.021

Summary

In this chapter, data were presented to describe the sociodemographic characteristics of the study sample. Reliability indices for the marital functioning instrument and resource items were provided. The Pearson product-moment correlation coefficient was used to delineate the degree and direction of relationships between the major study variables. To compare husbands' and wives' scores for marital functioning and the five resource dimensions, the results of *t*-tests for paired samples were described. Additional variables found to be significantly correlated with marital functioning were also identified and a step-wise multiple regression computed to determine those variables that best predict marital functioning for both the husbands and wives.

A summary and discussion of the study findings is provided in Chapter VI. In addition, the implications of the findings for nursing practice, nursing education, and further research are delineated.

CHAPTER VI

SUMMARY AND CONCLUSIONS

Overview

A descriptive, correlational design was used in this study to explore the relationship between perceived resources and perceived marital functioning in the husband and wife post-myocardial infarction. In this chapter, a summary and interpretation of the study findings are presented. Sociodemographic and clinical characteristics of the study sample as well as data from hypothesis testing are examined in the context of other recent research findings in the areas of marital functioning and recovery after an MI. The implications of this research for nursing practice and nursing education are delineated and recommendations made regarding further research.

Summary and Interpretation of the Findings

Sociodemographic Characteristics of the Study Sample

The mean ages of both husbands and wives in this study were consistent with those reported by other researchers. Mean age of the husbands was 56.4 years, which is similar to MI patients studied by Stern et al. (1977), whose mean age was 53 years, and those of Wishnie et al. (1971) with a mean age of 59.9 years. Wives' mean age in this

study was 53.7 years, which closely compares to the mean of 52 years reported by Skelton and Dominion (1973) and Bedsworth and Molen (1982).

Husbands in this study ranged in age from 40 to 74 years with 33.6% of the sample being 60 years of age or older. The large percentage of men in the older age group differs from studies completed by Croog and Levine (1977) and Dhooper (1983), in which male subjects were limited to those who were 60 years of age or under. The authors' rationale for the age limitation was to secure a homogeneous sample without a history of previous MI or other major illnesses. Only one other study was found in which patients over 69 years of age were included in the sample (Bedsworth & Molen, 1982). Failure to limit the age of husbands to those under 65 is a confounding variable in this study as chronic diseases and the likelihood of sustaining a second infarction increase with age.

Years of marriage as reported by the husbands in this study ranged from 1 to 48 years with a mean of 29.8 years. The majority of the couples (61.9%) had been married more than 31 years, which indicates that a large proportion of the marriages were stable in character. These findings are congruent with those of Croog and Levine (1977), who reported that half of their subjects had been married at least 21 years and that 95% were married to the same spouse at the 8-year follow-up.

With the exception of one male Indian, all of the husbands and wives in this sample were Caucasian. Only three studies were found in the literature in which race was used as a descriptor for patients

post-MI (Croog & Levine, 1977; Dhooper, 1983; Stern et al., 1977). Two of the studies included nonwhites in the sample (Dhooper, 1983; Stern et al., 1977). In the third study, which encompassed the largest sample (N = 345), the authors included only Caucasians (Croog & Levine, 1977).

The numbers of children of the couples as reported by the husband ranged from 0 to 13, with a mean of 3.7 children. Twenty-nine percent of the couples had two children or less, 30% had three children, and 41% had four or more children. While the mean number of children reported by the couples is well above the national average of less than one child for Caucasian families (U.S. Bureau of the Census, 1984a), the majority of the couples were in the 50 and over age group, in which larger families were the norm.

In this study, 58 of the husbands (59%) reported they had no children living at home. The remainder of the husbands reported from one to five children still at home with a mean of .8 children. These findings are congruent with the mean ages of the husbands and wives and the mean years of marriage, which indicate that the majority of couples are in Duvall's (1977) Stages VI (Families Launching Young Adults) and VII (Middle-Aged Parents) of the family life cycle. Two studies of MI patients were found in which a larger proportion of the sample reported children living at home (Croog & Levine, 1977; Dhooper, 1983). In both of these studies, however, the samples were younger, with the oldest subjects being 60 years of age.

Level of education for both husbands and wives ranged from "junior high school" to "beyond four years of college." For the husbands, 17.5% reported having less than a high school education, 40.2% were high school graduates, 23.7% had a partial college education, and 18.5% had 4 or more years of college. Similar distributions were reported for the wives. In this group, 15.8% had less than a high school education, 47.4% were high school graduates, 22.1% had completed some college, and the remaining 14.7% had finished 4 or more years of college. Distributions for levels of education in this study were higher than those reported in other studies of MI patients and spouses. Forty-four percent of the subjects in Croog and Levine's (1977) study had less than a high school education, and only 50% of the wives of MI patients in the study by Bedsworth and Molen (1982) had a high school education or more. In contrast, over 80% of both husbands and wives in this study had at least a high school education. Because an adequate level of education may enhance the family's ability to comprehend and solve its problems (Smilkstein, 1978), education may serve as a resource for families experiencing the crisis of an MI.

Information regarding work status indicated that 51% of the husbands and 43.9% of the wives in this study were currently working outside the home. This is a smaller number of husbands than has been reported in studies by other researchers. Stern et al. (1977) reported that 90% of the subjects in their study who were working pre-infarction returned to work post-MI. The mean time for return to work was 8.5 weeks post-infarction. In the study by Croog and Levine (1977), 27.5%

of the sample returned to work less than 2 months after the infarct. By the end of the post-infarction year, 83.6% were employed on either a full- or part-time basis. While return to work is considered to be an important indicator of the husband's recovery post-MI, there are several factors which render the data regarding work status in this study difficult to interpret. First, information was not collected regarding the husband's employment before the MI. For those 49 husbands who were not working after the infarct, it is not known whether the MI precipitated the change in work status. In addition, a significant proportion of the husbands in this study were 60 years of age and over and may thus have been retired before the infarct. The smaller number of husbands employed in this study post-MI may thus reflect the older age of the sample.

A larger number of both husbands and wives responded to the question related to current occupation than had reported they were currently working outside the home. Of the 94 husbands who responded, the largest proportion (23.4%) indicated that they were retired. In addition, 19.2% listed their occupation as skilled worker, 13.8% as professional, and 11% as executive. For the wives, the largest percentage (40.3%) listed their occupation as "other." Additional common occupations reported by the wives were clerical (18.1%) and professional (19.4%). Only seven of the wives stated that they were retired. The discrepancy between the number of subjects working and those reporting an occupation may reflect the fact that some husbands

and wives had not yet returned to work following the infarct, but have plans to do so in the future.

Eighty-four of the husbands and 67 of the wives responded to the question regarding work-related stress, which is again a larger number than reported they were currently working outside the home. A total of 69.1% of the husbands and 60.7% of the wives indicated a moderate or high amount of stress associated with their jobs. No studies were found in which wives' job-related stress was assessed post-MI. Croog and Levine (1977), however, examined job-related stress in post-MI patients during convalescence. In comparing subjects' responses regarding pre-illness job stress and the stress experienced post-MI, the researchers found that subjects' perceptions of stress decreased by the end of the post-infarction year. Nevertheless, work-related stress continued to be reported by a number of patients, particularly those in executive or professional occupations. The findings of this study appear to support those of Croog and Levine (1977), but inclusion of a question regarding pre-illness stress would have aided interpretation of the findings.

Combined annual income was disclosed by all but three of the husbands. Twenty-one percent reported an income between $0 and $19,999 yearly. The largest percentage of husbands (29.5%) stated their income was between $20,000 and $29,999 per year, and the remaining 51.5% had incomes of $30,000 or more yearly. Only one other study was found in which income levels were reported, but the data cannot be accurately compared as the reported salaries are for the period from 1965 to 1967 (Croog & Levine, 1977). The median income for Caucasian families in

1982 was $21,117 (U.S. Bureau of the Census, 1984b). It is thus evident that the majority of the study sample had yearly incomes well above the national average.

In summary, while the study sample is similar in some respects to other samples described in the literature, significant differences are evident. The mean ages of the husbands and wives were 56.4 years and 53.7 years, respectively, which is congruent with the literature. One-third of the subjects in this study, however, were 60 years of age and over, and the high number of subjects in this upper age group resulted in findings that were different from those of other authors. The couples in this study had been married longer, had fewer children living at home, and had a higher proportion of retired persons than other samples of MI patients. The study sample also tended to be more educated and to have higher annual incomes than other populations described. Because a convenience sample was used in this study, education and income levels may reflect a sampling bias. Those couples whose education and income were higher may have been more likely to participate than couples at the lower end of the spectrum. In addition, it is not known whether the patient populations of the physicians and rehabilitation program providing subjects for the study were representative of the community-at-large. Generalizations from this sample to the larger population must therefore be made cautiously.

Clinical Status of the Husbands Post-MI

The husbands were quite heterogeneous in relation to the number of months since their MI. Responses ranged from 0 to 12 months, with a

mean of 5.3 months post-MI. Approximately one-third of the husbands (32.6%) were in the first 3 months of rehabilitation, which is considered by researchers to be the time of greatest disruption and adjustment for both the patient and the spouse. Of the remainder of the husbands, 30.6% were 4 to 6 months post-MI, 22.1% were 7 to 9 months, and 12.7% were 10 to 12 months post-MI. No other studies were found in which patients were included at all points across the trajectory of rehabilitation. The focus of other authors has been to study a cohort of patients longitudinally as the cohort moves through the post-infarction year (Croog & Levine, 1977; Mayou et al., 1978a). Because the clinical status of husbands across the trajectory may differ, development of a single profile of the MI patient in this study is difficult.

An additional confounding variable in this study is that the sample was not limited to those husbands experiencing a first MI, which is in contrast to other studies found in the literature. A total of 28 husbands (29%) reported they had been hospitalized more than one time for a heart attack. The perceptions of these 28 subjects regarding physical status and severity of MI may differ from the remainder of the sample.

The majority of husbands (69.2%) perceived their heart attack as moderately or very severe. Only seven (7.4%) of the husbands reported they had no heart damage, and the remaining 22 husbands rated their MI as mild ("a little heart damage"). The findings seem to indicate that the husbands take their illness seriously. What is not known from the

findings is whether or not the husbands perceive the severity of their illness accurately or if perceptions of those who had experienced more than one MI differed from the remainder of the sample. Physician ratings of the husbands' clinical status were not included as part of the assessment, which would have strengthened the findings.

In spite of their perceptions of severity, none of the husbands reported being either completely disabled or capable of only limited self-care. Over half of the husbands (55.1%) stated they were restricted in physically strenuous activity only, and an additional 27.6% were fully active. The reported level of activity would seem to indicate that the physical status of the husbands is good and that they are experiencing few, if any, residual complications from the MI.

A total of 50 husbands (51%) denied having any chronic health problems. The remaining 47 husbands (48%) reported experiencing at least one chronic disease, with the most frequently recorded problems being hypertension (16 cases), arthritis (12 cases), and lung disease (11 cases). No other studies were found in which the presence of other chronic diseases was reported for MI patients. Two studies were found in which participation was limited to those without a history of other major illness (Croog & Levine, 1977; Dhooper, 1983). Chronic diseases are a confounding variable in this study because they may have altered the husband's perception of his physical status and activity level.

Seventy of the husbands (71%) stated they had participated in a teaching program during hospitalization for the MI. Only 48 husbands, however, reported that the program had included instruction on ways of

dealing with problems that could develop at home. Further, only 23% of the husbands were currently participating in an organized heart program. Thus, 27% of the husbands received no formal instruction before hospital discharge, and an additional 51% had received no assistance in anticipating and solving future problems. These findings support those of other researchers regarding lack of adequate instruction and support for patients and spouses post-MI and point to the need for improvement in patient education and on-going follow-up of families after discharge.

A summary of the clinical status of the husbands in this study indicates that the majority were 5.2 months into convalescence following a first MI, perceived they sustained some heart damage during the infarct, were free of other chronic diseases, and were physically active, through restricted in strenuous activity. In addition, most of the husbands had received instruction regarding the post-MI regimen before hospital discharge but were not participating in an organized heart program at the present time.

Other Potential Factors Influencing Marital Functioning Post-MI

Husbands were questioned regarding use of both alcohol and cigarettes before the MI. Use of alcohol was denied by 24 of the husbands, while history of smoking was denied by 47 (48%) of them. Forty-nine of the husbands had smoked before the infarct, and 68.8% of these reported smoking one or more packs of cigarettes daily. Seventy-one of the husbands admitted to drinking alcohol before the infarct,

but 52.1% of this group reported only occasional use. Only 22.6% (total N = 16) stated they had used alcohol on a daily basis before the infarct. Information regarding current use of cigarettes and alcohol was not included in the sociodemographic questionnaire. Inclusion of these data would have provided valuable information regarding the influence of the MI experience on the husbands' health behaviors.

The husbands were also asked to record life events that had occurred in their families in the year before completing the questionnaire. Events most frequently reported by husbands included (retirement (13 cases), major sickness in the family (25 cases), death of a close friend or family member (14 cases), concern over aged parents (23 cases), and change in work hours (18 cases). These events are congruent with the husband's experience of an MI and also with Stages VI and VII of Duvall's (1977) family life cycle into which most of the couples fall. It is also of significance that none of the husbands reported the occurrence of a divorce or separation within the past year, and only two husbands reported the incidence of marital problems. These findings seem to indicate that the husbands did not perceive the MI as having a disruptive influence on the marital relationship and that the vast majority of the marriages remained stable over the post-infarction year.

The Marital Functioning Instrument

The marital functioning instrument (Kline & Warren, 1980) used in this study was designed to measure marital functioning across the five

dimensions of Adaptation, Partnership, Growth, Affection, and Resolve conceptualized by Smilkstein (1978). Smilkstein compared the family's functioning to an organ system in the body in that each organ has its own unique function, but all are interrelated. The family is thus a nurturing unit striving to maintain the integrity of its component parts.

As initially conceptualized, Kline and Warren's marital functioning instrument consisted of 42 items with five scales, one scale to measure each dimension of Smilkstein's APGAR. The five scales, however, were not validated by factor analysis. Instead a single 24-item scale was identified with a Cronbach's alpha of .91 for the husbands and .94 for the wives indicating a high degree of interrelationship among the items. At least two items from each of the five APGAR dimensions are contained in the instrument.

The validation of a unidimensional scale to measure marital functioning is in contrast to the findings of other researchers who view the construct as multidimensional (Epstein et al., 1983; Moos & Moos, 1983; Pless & Satterwhite, 1973). Examination of established instruments, however, provides possible explanations for this finding. First, the instrument was based on work by Smilkstein (1978), who viewed the family's functioning as "interrelated." Tests of reliability on Smilkstein's original five-item instrument yielded a Cronbach's alpha of .80. It is thus not surprising that an instrument based on Smilkstein's conceptualization would demonstrate a high degree of interrelationship among the APGAR components.

In addition to Smilkstein (1978), several other researchers have indicated that an interrelationship may exist between the dimensions of family functioning (Barnhill, 1978; Epstein et al., 1983; Moos & Moos, 1976). Two of the authors developed instruments in which intercorrelations were found between various scale dimensions of family functioning. Moos and Moos (1976) reported intercorrelations around .20 for the 10 subscales of the Family Environment Scale. In the more recent McMaster Family Assessment Device, Epstein et al. (1983) found that the correlations between the seven scales ranged from .40 to .60. The findings of these authors seem to indicate that it may be unrealistic to expect the marital couple to artificially dichotomize individual areas of functioning. Such a dichotomy is in contrast to the work of Barnhill (1978), who proposed that the dimensions of family functioning are interrelated and "can be integrated into an interlocking, mutually causal system" (p. 96). Husbands and wives in this study may thus have viewed the items of Kline and Warren's marital functioning instrument as closely correlated and consequently failed to identify five separate dimensions on the questionnaires.

Research Questions and Hypotheses

The purpose of this study was to describe the relationship between selected perceived resources and perception of marital functioning after an MI by addressing the following research questions:

1. Is there a relationship between the husband's perception of his resources (social, cultural, religious, and medical) and his perception of marital functioning after the MI?

2. Is there a relationship between the wife's perception of her husband's resources (social, cultural, religious, and medical) and her perception of marital functioning after the MI?

3. How do husbands' and wives' perceptions of the husband's resources and their perceptions of marital functioning compare after the husband's MI?

For each research question, null hypotheses were formulated as a basis for statistical testing of the relationship between variables. A summary and interpretation of the findings for each research question and related hypotheses are presented below.

Research Question 1: Is there a relationship between the husband's perception of his resources (social, cultural, religious, and medical) and his perception of marital functioning after the MI?

Five null hypotheses, one for each resource item, were used to test the relationship between perceived resources and perceived marital functioning for the husbands. Statistically significant relationships were found for religious and medical resources and the two items related to social resources (Hypotheses 1, 2, 4, and 5). The four null hypotheses were therefore rejected. No significant correlation was found, however, between the husband's perception of cultural resources and marital functioning post-MI (Hypothesis 3). The null hypothesis was not rejected. Thus, in answer to the first question: There is a significant relationship between the husband's perception of his social, religious, and medical resources and his perception of marital

functioning after the MI, but no relationship between cultural resources and marital functioning post-MI.

In addition to the resource items, marital functioning was found to be significantly correlated with three other variables: the husband's perceptions of his wife's job-related stress and the husband's perception of his current activity level and therapeutic diet. Slight positive relationships were found for the wife's job stress and husband's activity, while the relationship between diet and marital functioning was negative. Although statistically significant, the correlation coefficients were less than .22, indicating only a minimal relationship between the variables. The number of significant, though small, correlations for the husbands is probably a result of the large sample employed in this study. Detection of slight relationships among variables improves as the sample size increases (Borg & Gall, 1979).

The correlation coefficients indicate the degree and direction of relationships between the variables. What cannot be inferred from the correlation coefficients is a cause-effect relationship between variables. Thus, it is not possible to state that the husband's perception of resources, activity, his wife's job stress, or therapeutic diet results in a higher (or lower) level of marital functioning post-MI.

Because a number of the relationships between the variables were statistically significant, a step-wise multiple regression was computed to determine those variables which best predicted the husband's marital functioning post-MI. The religious resource item was found to be the single best predictor of marital functioning for the husbands,

accounting for the largest proportion of the variance. Other significant predictors of the husband's marital functioning included medical resources, adherence to a special diet, and limitation of social contacts.

The findings regarding religion are of particular interest in that no other studies were found in which religious resources were correlated with marital functioning after an MI. Further, only one study was found in which the authors examined religion as a resource for patients post-infarction (Croog & Levine, 1977). The majority of patients in Croog and Levine's (1977) study considered their religion to be of importance to them, but the crisis of the MI did not alter patients' religious orientation. Religion seems to be a resource only for those to whom it was important before the infarct. The findings of this study seem to support those of Croog and Levine regarding religion as a significant resource post-MI. In addition, insofar as the item regarding religious resources was designed to tap the husband's perception of religion as a comfort and support during difficult times, it is likely that religion was a long-term resource for husbands in this study.

Access to medical care as a resource for patients post-MI has been documented by other researchers. Croog and Levine (1977) indicated that physicians were the most frequently used professional resource cited by patients post-MI. Patients reported maintaining consistent and continuous contact with their physicians during rehabilitation. The physician is a significant figure in the lives of MI patients

during the post-infarction year. It is the physician who assesses the patient's progress, increases the activity level, grants permission for return to work, and alters the post-MI regimen. Ability to make contact with the physician easily when needed may thus serve to allay some of the husband's anxiety regarding his condition. The significance of medical resources as a predictor of the husband's marital functioning post-MI in this study is therefore not unexpected.

Adherence to a therapeutic diet was another variable found to be a significant predictor of the husband's marital functioning after the infarct. The relationship between dietary adherence and marital functioning was a negative one. Dietary restriction of cholesterol is one of the key components of the post-MI rehabilitation regimen. For the husbands, adherence to a low-cholesterol and/or low-calorie diet may result in significant life-style changes. Adjustments may also be required from the wife as she is typically the partner responsible for cooking. According to other researchers, the post-MI rehabilitation regimen is an area of conflict for couples after the MI (Skelton & Dominion, 1973; Wishnie et al., 1971). Wives tend to be overprotective of their husbands, while the husbands are prone to dependency and irritability (Skelton & Dominion, 1978). Diet and adherence to diet for the husbands in this study may have resulted in conflict with their wives and thus negatively predicted marital functioning after the MI.

A further significant predictor of the husband's marital functioning in this study was his perception of the limitation of his social contacts post-MI. Two possible explanations may be offered for this

finding. First, limitation of social contacts may remind the husband of his increased dependency and loss of social roles, which may result in increased marital tension. Second, the limitation of socialization with friends may reflect a loss of the social support to which the husband has become accustomed. Social networks have been explored by a number of researchers as a resource post-MI (Croog & Levine, 1977; Finlayson, 1976; Jacobson & Eichhorn, 1964). Friends are considered to be nearly as important as family in providing help and support to patients after the MI (Croog & Levine, 1977). Those husbands who find it necessary to limit socializing with friends may feel more socially isolated, and marital tension may result.

Research Question 2: Is there a relationship between the wife's perception of her husband's resources (social, cultural, religious, and medical) and her perception of marital functioning after the MI?

One null hypothesis was formulated to test the relationship between each of the five resource items and marital functioning for the wives. Significant correlations were found for the cultural, religious, and medical resource items and one of the social resource items (importance of social contacts). For these items, the null hypotheses were rejected (Hypotheses 6, 8, 9, and 10). The fifth resource item, limitation of social contacts (Hypothesis 7) was not significantly related to the wife's perception of marital functioning post-MI, and the null hypothesis was not rejected. An affirmative response may be given to the second research question insofar as there is a relationship between the wife's perception of her husband's social, cultural,

religious, and medical resources and her perception of marital functioning after the MI. There is no relationship, however, between the wife's perception of the limitation of her husband's social contacts and her perception of marital functioning after the MI.

Because the sample in this study was large (N = 98 wives), a number of significant, though slight, relationships between the variables were detected. In addition to the resource items, significant relationships were found between marital functioning and the following variables: life events, the husband's current activity versus pre-infarction activity, years of marriage, wife's education, wife's job stress, husband's job stress, and husband's current activity level, therapeutic diet, and use of alcohol and cigarettes before the MI. Although the correlations for the wives were generally higher than those for the husbands, all of the relationships described above were less than .35, indicating only a slight relationship among the variables.

To determine the variables which best predicted marital functioning for the wives, a step-wise multiple regression was computed using the five resource items and the other significantly correlated variables. The following items were found to be significant predictors of the wife's marital functioning post-MI: medical resources, religious resources, life events, current versus previous activity, and current activity level.

The single best predictor of the wife's marital functioning in this study was the wife's perception of her husband's medical resources post-MI. Medical resources accounted for 28.5% of the variance in the

wife's marital functioning score. This finding is congruent with those reported by other researchers (Croog & Levine, 1977). The convalescent period is documented to be a stressful time for wives due to their husbands' dependency and also due to fears of precipitating another infarct (Wishnie et al., 1971). In addition, wives have reported the need for more information regarding care of their husbands at home and particularly the procedure to follow if another infarct occurs (Hentinen, 1983). Thus, if the wife perceives her husband can make contact with his physician easily when he needs medical attention, her anxiety level may decrease. A decrease in anxiety regarding her husband's condition may positively influence her perception of marital functioning post-infarction.

Religious resources were another variable found to be predictive of the wife's marital functioning. The previously mentioned study by Croog and Levine (1977) was the only work in which religion was addressed as a resource post-MI. The explanation for the finding regarding the wife's perception of her husband's religious resources as a predictor of her marital functioning post-MI is unclear. A possible interpretation, however, is that if the wife perceives her husband's religion is a comfort and support to him during difficult times, her anxiety regarding his condition may decrease. Further, although the wife's perception of her religious resources was not measured in this study, it is likely that husbands and wives who have been married for a long period have similar values regarding religion. Those who perceive

religion as a comfort and support may have a different perception of the MI than those without a religious orientation.

Another significant predictor of marital functioning for the wives was her perception of the life events that had occurred in her family in the last year. Life events were a negative predictor of the wife's marital functioning after the MI. In a study by Mayou et al. (1979), life events were found to be a significant predictor of changes, either for better or for worse, in the marital relationship after the MI. The findings of this study seem to support those of Mayou and his associates. For couples struggling to adapt to a serious illness, the addition of other stressors may be more than the couple is capable of handling. Marital deterioration may thus result.

The two other significant predictors of the wife's marital functioning, the husband's current versus previous physical activity and the husband's current activity level, are related concepts and are therefore discussed together. The husband's current activity level is an indicator of his progress toward full recovery. Those husbands who are fully active are unlikely to have residual complications from the MI or to have a complex medical regimen. It is thus likely that current activity is an indication to the wife of her husband's prognosis. As the husband approaches his pre-infarction level of activity, the wife's anxiety and overprotectiveness as well as the couple's marital tension may decrease.

Research Question 3: How do husbands' and wives' perceptions of marital functioning and their perceptions of resources compare after the MI?

Null hypotheses were formulated to test differences in husbands' and wives' perceptions of marital functioning and the social, cultural, religious, and medical resource items. Computation of *t*-tests for paired samples indicated that husbands' and wives' mean scores differed on two of the variables: marital functioning and religious resources (Hypotheses 14 and 16). The null hypotheses were thus rejected. No significant differences were discovered in husbands' and wives' mean scores for importance or limitation of social contacts, cultural resources, or medical resources (Hypotheses 11, 13, and 15). Null hypotheses for these variables were not rejected. Thus, in answer to the third research question: There are significant differences in husbands' and wives' perceptions of marital functioning and religious resources after the MI, but no differences in perceptions of social, cultural, or medical resources after the MI.

The findings in regard to differences in husbands' and wives' perceptions of marital functioning after the MI are not surprising. Marital tension and conflict are commonly reported problems in the first few months of convalescence (Skelton & Dominion, 1973; Stern & Pascale, 1978; Wishnie et al., 1971). The patients' therapeutic regimen is one of the most common areas of conflict for couples, with husbands tending toward dependency and wives toward overprotectiveness (Skelton & Dominion, 1978). In addition, many wives express fears of precipitating another MI by quarreling with their husbands (Mayou et al., 1978a). Fatigue, depression, and anxiety have been reported in both husbands (Mayou et al., 1978a) and wives (Hentinen, 1983).

According to King (1981), emotional states such as fear may distort individuals' perceptions of the world around them. The anxiety and tension experienced by the husband and wife after the MI may thus distort their perception of the marital relationship. Further, the partners, and particularly the wife, may fail to communicate their concerns to one another due to fear of precipitating another infarct. Lack of communication and marital tension are two possible interpretations of the differences in husbands' and wives' perceptions of marital functioning found in this study.

Differences in perceptions of the husbands' religious resources in this study are more difficult to interpret than differences in perceptions of marital functioning. No studies were found in which differences in husbands' and wives' perceptions of religion as a comfort and support were assessed after the MI. The mean score of the husbands in regard to religion was 4.50, while the mean score of wives was 4.15 of a possible 6.0. It is thus evident that both partners agreed that the husband's religion was an important resource for him. The husbands, however, rated religion as slightly more important than did the wives, which may be due to the fact that the wives were recording their perceptions of their husbands' religious resources while the husbands were reporting their own perceptions. Further, as the husbands were the partner experiencing the life-threatening illness, they may have perceived their religion as being more significant to them than their wives did.

Significant differences were not found in husbands' and wives' perceptions of medical and cultural resources or importance and limitation of social contacts. No other studies were found in which husbands' and wives' perceptions of resources were assessed following the MI. One explanation for the lack of significant findings in relation to differing perceptions of resources may be that the majority of couples had been married 30 years or more. Husbands and wives with a mutual history of this length may have fewer areas in which their perceptions differ from those who have been married for shorter periods.

Limitations of the Study

While the results of this study are promising, a number of methodological limitations are evident from the summary and interpretation of the findings. Inclusion of husbands over 65 years of age, those who had experienced more than one MI, and those with a history of chronic diseases resulted in a heterogeneous population and made generalization of the findings difficult. The study could have been strengthened either by excluding subjects in these groups or by examining them separately and comparing them to the rest of the sample.

An additional limitation of the study was the inclusion of subjects at all points across the trajectory of rehabilitation. While significant relationships were found between resources and marital functioning, it is not known whether the importance of specific resources varied at different points along the trajectory.

Another limitation of the study is that the wife's perceptions of her resources were not assessed. Resource items tapped only the wife's perception of her husband's resources. It is thus not known if differences exist in husbands' and wives' perceptions of individual resources after the MI or if the same resources are considered to be of value to both partners.

A final limitation of the study is that only one item was used to measure the couples' perceptions of religious, medical, and cultural resources. Multidimensional assessment of resources would have provided more information regarding the specific resource dimensions and their importance for couples after an MI.

Conclusions of the Research

In Chapter II of this study a conceptual model was presented for the husband and wife post-myocardial infarction in which the anticipated relationships between the study variables were delineated. Based on the study findings, the following conclusions and modifications in the model are proposed. (See revised Model, Figure 6.1.)

The sociodemographic items provided information regarding the knowledge, past experience, needs, and values of the husbands and wives. These factors were considered to be of crucial importance in determining the partners' individual reactions to the MI. For the wife, knowledge (education) and past experiences (husband's use of alcohol and cigarettes before the MI; years of marriage) were found to be significantly correlated with her perception of marital functioning after the infarction. Further, the occurrence of life events during

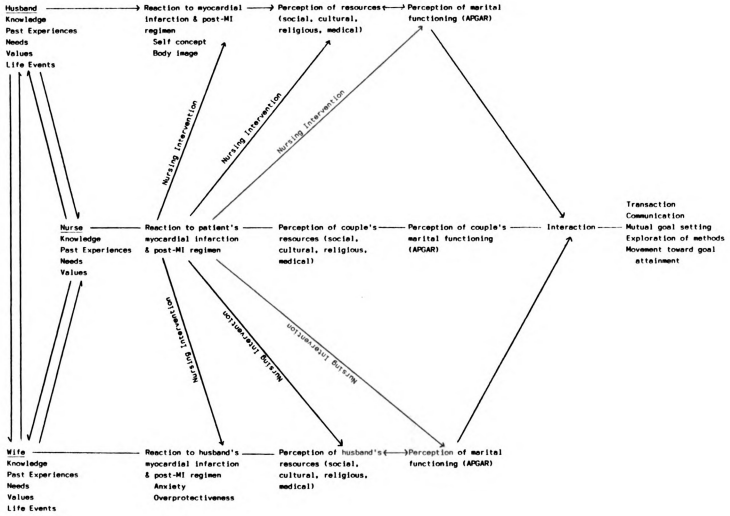

Figure 6.1: Revised Nursing Intervention Model for the Husband and Wife Post-Myocardial Infarction. (Adapted from King, 1981; modified from Kline & Warren, 1982.)

the post-MI year was found to be a significant predictor of the wives' marital functioning. It is thus recommended that life events be added to the model as a factor influencing the wife's perception of the MI and, ultimately, her perception of marital functioning.

Reactions of the husbands and wives to the myocardial infarction were conceptualized as involving anxiety and overprotectiveness on the part of the wives and changes in self-concept and body image for the husbands. Although these factors were not measured in this study, interpretation of the identified relationships between resources and marital functioning supports the importance of these factors in determining the couple's reaction to the MI. Various components of the post-MI regimen, such as diet and current activity level, were also found to be significant predictors of marital functioning post-myocardial infarction. The husband's medical regimen has been reported to be a significant area of conflict for couples during rehabilitation. It is thus evident that the husband and wife react not only to the MI, but to the life-style changes precipitated by it. The husbands' and wives' reactions to the post-MI rehabilitation regimen have therefore been incorporated into the model.

It was hypothesized that a relationship existed between husbands' and wives' perceptions of resources and their perceptions of marital functioning post-MI. Adequate resources were viewed as an asset upon which the couple could draw in times of need. Lack of resources or ineffective use of resources was thought to negatively affect the couples' marital functioning. The findings of this study indicated that

there are significant relationships between perceived resources and perceived marital functioning in the husband and wife post-myocardial infarction. Further, religious and medical resources were found to be significant predictors of both partners' perceptions of marital functioning after the infarct. What cannot be inferred from the study findings, however, is a cause-effect relationship between the variables. It cannot be stated that adequate resources result in a higher level of marital functioning.

Interaction between the husband and wife after an MI was proposed to be dependent on accuracy of perception and their ability to communicate. Study findings indicated that there are significant differences in the husbands' and wives' perceptions of marital functioning and also the husbands' religious resources after the MI. Differences in perception on the part of the husband and wife will hinder the processes of interaction, transaction, and, ultimately, goal attainment. Nursing interventions aimed at insuring perceptual accuracy and enhancing communication between the partners will thus be of value for husbands and wives post-myocardial infarction.

Implications

Significant relationships were found in this study between selected perceived resources and perceived marital functioning in the husband and wife post-myocardial infarction. Further, religious and medical resources were found to be significant predictors of marital functioning for both husbands and wives post-MI. The findings of this study have implications for nursing practice, nursing education, and

further research in nursing. In this section, implications for each of the three areas are delineated and application made to the conceptual model formulated for use with families post-MI where appropriate.

Implications for Nursing Practice

A number of implications for nursing practice derive from this research. King's theory of goal attainment (1981) was used in this study as a basis for understanding the application of the study variables to the nursing process. Implications of the research findings for nursing practice are delineated in the context of this conceptual model for nursing.

The findings of this research point to the need for Clinical Nurse Specialists in primary care to develop an awareness of the psychosocial sequelae of a myocardial infarction for the patient and the spouse. An MI is viewed as a crisis experience by both partners, and as a result has the potential for creating individual as well as marital disruption. Because the period of greatest disruption occurs after hospital discharge, a comprehensive nursing assessment is vital at the couple's follow-up visits to the primary care site. The nursing assessment will enable the Clinical Specialist to gain a holistic perspective of both partners.

Husbands' and wives' knowledge, past experiences, values, and needs may differ. As a result, they may have different perceptions of the MI and its consequences in their lives. The factors influencing husbands' and wives' perceptions must be assessed by the Clinical Nurse

Specialist so that areas in which the partners' perceptions differ may be delineated. Factors influencing perceptions as well as possible differences in perceptions should be added to the family data base during assessment. Complete individual and family bases will assist in insuring that continuous and comprehensive care is provided to the couple throughout the recovery period.

The findings of this study also point to the need for knowledge of family theory and the normative changes experienced by couples at various stages of the family life cycle. Life events have been shown by researchers to be associated with changes in the marital relationship after the infarct. Further, life events were found to be a significant predictor of the wives' marital functioning post-MI. Because the majority of couples in this study were at Stages VI and VII of Duvall's (1977) family life cycle, they are vulnerable to the normative stressors of middle age. These normative stressors, added to the nonnormative stressor of the MI, may result in deterioration of the marital relationship. Stage of the family life cycle should thus be included as part of the family data base by Clinical Nurse Specialists in primary care. Knowledge of family life stage will aid in identifying those couples at risk for the development of marital disruption post-MI.

Knowledge, past experiences, values, needs, life events, and stage of the family life cycle are the factors that determine individuals' perceptions of the world around them. Perception, in turn, determines how the husband and wife react to the MI.

Individual reactions of the partners are another needed area of nursing assessment for Clinical Nurse Specialists in primary care. The findings of this study indicate that couples react not only to the experience of an MI, but to the life-style changes necessitated as a result of the rehabilitation regimen. Selected aspects of the post-MI regimen were found to be significant predictors of husbands' and wives' marital functioning. The post-MI regimen may be an area of marital conflict as a result of different perceptions of the regimen itself as well as differing perceptions of responsibility and adherence. Husbands' and wives' perceptions of the therapeutic diet and the husband's activity level must therefore be assessed on follow-up visits to the primary care site so that problem areas can be addressed.

The stress generated in the husband and wife as a result of the MI may be mediated by the identification and use of resources. Social, religious, and medical resources were found to be significantly correlated with husbands' and wives' perceptions of marital functioning post-MI. Further, the medical and religious resources dimensions were found to be significant predictors of marital functioning for both partners. There is therefore a need for Clinical Nurse Specialists in primary care settings to assess resources multidimensionally in working with families after an MI. In addition, the necessity of assessing both husbands' and wives' perceptions of religious resources is evident from this research. Nurses in advanced practice need to develop expertise in assessing clients' spirituality as these values are a crucial resource for coping after an MI.

A final area of assessment indicated by this research is marital functioning. The potential for marital disruption is great after an MI. Anxiety, which may occur in both partners, distorts the couple's perception of their functioning and thus results in differences in husbands' and wives' perceptions of marital functioning after the MI as was found in this study. The Clinical Nurse Specialist in primary care is in a unique position to assess multidimensionally marital functioning after an MI and also to identify changes in the marital relationship across the trajectory of rehabilitation. Smilkstein's (1978) Family APGAR and Spanier's (1976) Dyadic Adjustment Scale are examples of screening tools that may be of value to the Clinical Specialist in identifying couples at risk for marital dysfunction. Use of screening tools will pinpoint differences in perceptions of marital functioning between husbands and wives and delineate specific problem areas for both partners.

A comprehensive nursing assessment in the areas delineated above is vital in providing needed information for individual and family data bases within the primary care setting. Following assessment, the data bases, in conjunction with family and individual care standards, provide the framework for planning, implementation, and evaluation of nursing interventions by the Clinical Nurse Specialist. Nursing interventions are needed at all points across the trajectory of rehabilitation. With the advent of Diagnosis-Related Groups (DRG's), the average hospital stay for the MI patient has decreased to approximately 10 days. Clients are discharged at a time when they are still vulnerable to

physical and psychosocial complications. Ongoing follow-up of patients and families by health professionals in the primary care setting is greatly needed for this at-risk group.

Nursing interventions can be directed at increasing the husbands' and wives' understanding of their past experiences, values, and needs and the influence of these factors on their individual perceptions of the MI. If differences in perceptions are detected, the Clinical Nurse Specialist may serve as a facilitator to assist the husband and wife in communicating to one another their differences in knowledge, needs, and values so that perceptual accuracy is assured. This intervention may be accomplished through education and counseling with the couple during their visits to the primary care site.

The findings of this research also point to the need for the Clinical Specialist to facilitate the couple's understanding of their developmental stage and the normative versus nonnormative stressors experienced during that stage. This intervention may be of value in enabling clients to anticipate problems and to seek appropriate solutions. Further, discussion of family life cycle stages provides a forum for the Clinical Nurse Specialist and the marital couple to identify past strengths and successful coping strategies that could be used in the present situation.

Given the couple's reaction to the MI and the life-style changes necessitated by the post-MI regimen, interventions directed at increasing the couple's knowledge are appropriate. Inadequate instruction after discharge is a problem commonly reported by both patients and

spouses in the literature. Instruction regarding the pathophysiology of the MI, therapeutic diet, medications, and activity is one strategy which the Clinical Nurse Specialist may employ to increase the couple's knowledge. Although instruction of this type may have been initiated in the hospital, reiteration of it will undoubtedly be required during convalescence. Such a structured education program can be incorporated into the couple's visits to the primary care site. Further, the couple's visits to the clinic provide an ideal opportunity for the Clinical Nurse Specialist to identify potential problems that may arise at home and to assist the couple in developing strategies to address them. The Clinical Nurse Specialist may also work with the couple to develop a procedure for the wife to initiate should the husband experience another MI at home.

Identification and use of resources are crucial in assisting the couple to adapt to the crisis of the MI. Anxiety and other emotional states, which are common after an MI, may distort the couple's perception of their resources and thus hinder their ability to use the resources effectively in the coping process. If resources are lacking or ineffectively used, the couple's marital functioning may be negatively affected, and their ability to nurture one another may be impaired. Nursing interventions directed at perception of resources are therefore vital.

Social, religious, and medical resources were found to be of significant value to both the husbands and wives in this study. Consequently, the Clinical Nurse Specialist may encourage couples to

maintain contacts with family, friends, and church groups after the MI as the husband's physical status permits. Further, referral of couples to community resources such as rehabilitation programs and heart clubs may provide a cost-effective means for families to increase their self-care capabilities and maintain social contacts post-MI. For the wife, referral to a cardiopulmonary resuscitation class may alleviate her anxiety regarding care of her husband at home. It is also crucial for the couple to maintain ongoing contact with health care providers at the primary care site. The couple should be familiar with the procedure for accessing the health care system 24 hours a day. Follow-up phone calls to the couple by the Clinical Nurse Specialist between their visits to the clinic may be of further assistance in providing support for the couple.

Another needed area for nursing intervention is the couple's perception of marital functioning. The findings of this study indicate that husbands' and wives' perceptions of marital functioning differ significantly after the MI. The potential for conflict and tension between the partners is therefore great. Data collected using a family screening tool during assessment may provide a vehicle for facilitating discussion of differences and clarifying the perceptions of each partner. In the context of the nurse-client relationship, an atmosphere may be created in which the husband, the wife, and the Clinical Specialist are encouraged to communicate openly with one another. Interaction between the husband and wife will thus be enhanced.

A final implication of this research for nursing practice is that the husband and wife post-MI are active participants in health care decisions. The attainment of goals set within the nurse-client relationship is the focus of the Clinical Nurse Specialist's interaction with the husband and wife. Goal attainment occurs as the husband, the wife, and the nurse share perceptions, exchange values to identify commonalities, and set mutual goals. The couple and the Clinical Specialist share their individual values and perceptions regarding the MI; the couple's social, cultural, religious, and medical resources; and level of marital functioning. Finally, appropriate action is taken to identify available resources and to enhance their use, thus strengthening the couple's functional integrity as a nurturing unit.

Implications for Nursing Education

Implications of the study findings for nursing education are pertinent for both graduate and undergraduate programs. There is need for nurses at all levels to increase their knowledge of family stress theory and its application to nursing practice. Content in relation to stress theory should be integrated into nursing curriculums as such theories provide a basis for holistic assessment of clients experiencing acute and chronic illnesses.

The findings of this study and those of other investigators indicate that the husband and wife post-myocardial infarction experience psychosocial distress in the process of adjustment. In many nursing school curricula, however, the focus of instruction is the pathophysiology of an MI and the medical regimen during rehabilitation.

Psychosocial aspects of rehabilitation are neglected due to the emphasis on hospital care. Instructors of nursing should incorporate pertinent research findings regarding the psychosocial aspects of the MI into the curriculum. Further, insofar as the bulk of rehabilitation for MI patients occurs after discharge, student nurses on the undergraduate level should be exposed to clinical experiences with post-MI patients in the community.

Nursing school curricula should be reexamined in relation to content on spiritual assessment. Although a frequently neglected area of instruction in educational programs, religion was found to be an important resource for both husbands and wives post-MI in this study. Nurses at all levels must develop expertise in assessing and facilitating the client's use of spiritual resources. This presupposes that nurses will become comfortable with their own spirituality, which is an additional area of consideration for educational programs.

The concept of resources and the significant role they play in assisting families to cope with crises should be included in nursing education. The findings of this research as well as those of other authors indicate that MI patients do not use the services available in the community even though such services may be of value to them. Both undergraduate and graduate students in nursing need to be aware of the plethora of community services available for clients so that appropriate referrals may be made in clinical practice.

Implications of the study findings in relation to marital functioning after the MI are also of value to nursing education. The

concept of family/marital functioning should be included in nursing curricula on the undergraduate and graduate levels. Students should be introduced to the screening tools available to assess marital functioning and have the opportunity to use them in clinical practice.

In relation to marital functioning post-MI, the potential for marital disruption and particularly the possible differences in husbands' and wives' perceptions of marital functioning should be included in nursing education. Nurses should also be aware of the possible moderating factors of marital functioning post-MI, such as life events and social support.

Awareness on the part of nurses regarding the need for support and instruction reported by patients and spouses post-MI should be emphasized in nursing curricula. Although many hospitals have developed formal in-patient and out-patient teaching and rehabilitation programs for MI patients, the findings of this study as well as those of other authors indicate that instruction and support are often inadequate. These are areas of continuing need throughout rehabilitation.

Implications for Nursing Research

In this study, the researcher sought to describe the relationship between perceived resources and perceived marital functioning in the husband and wife post-myocardial infarction. The findings of the study indicate that a number of questions remain for future consideration. Recommendations for further research are outlined below.

1. Studies should be conducted employing more stringent criteria for inclusion in the sample to limit confounding variables which could obscure the relationships between study variables. Specifically, participants should be limited to those under 60 years of age who have experienced a first MI.

2. Minority groups and individuals from lower socioeconomic classes should be included in future study samples. Subjects such as these may differ in their perceptions of marital functioning and use of resources after an MI from the white, predominantly upper-middle-class sample included in this study.

3. It is recommended that a study be conducted including both subjects experiencing a first MI and subjects experiencing additional infarctions in the sample. Subjects' scores on the resource items and marital functioning could be compared using *t*-tests. The differential effects of a second infarction on marital functioning and resource use could thus be delineated.

4. A study should be developed in which the sample is divided into groups according to age. Subjects 59 years of age and under could be compared to those 60 years and older to determine if age is a significant factor affecting perception of resources and/or marital functioning post-MI.

5. A study should be conducted employing subjects who are homogeneous in regard to length of time since the MI. Because subjects in the present study were included at all points across the first year, it was not possible to identify the point of greatest marital

disruption. It would be beneficial to measure marital functioning within the first 2 to 3 months post-MI as this is the period of greatest tension and conflict for couples according to the literature.

6. Kline and Warren's (1983) marital functioning instrument needs to be tested further to insure the reliability of the tool for use with other samples. Particularly, there is a need to administer the tool to nonwhites, low-income groups, and those with less than a junior high school education. It is possible that these groups differ appreciably in their perceptions of marital functioning from the sample employed in the present study. Further, insofar as the incidence of myocardial infarction is increasing in women, the instrument should be adapted for use with couples in which the wife has experienced an MI.

7. Longitudinal studies should be conducted to enable researchers to describe variations in marital functioning and perception of resources as couples move through the post-infarction year. The cohort could be measured on the variables at 2, 6, and 12 months post-MI, and their scores compared to determine differences. Profiles of couples at various points across the trajectory of rehabilitation could then be developed.

8. Research should be carried out to delineate wives' perceptions of the resources available to them after the MI. In this study, only wives' perceptions of their husbands' resources were measured. Differences in husbands' and wives' perceptions of their individual resources are an additional, related area for further research.

9. The resource items need to be expanded to measure more completely those resources which are of value to husbands and wives after the MI. Additional items should be incorporated to form a series of resource scales which tap different aspects of the social, cultural, religious, and medical resource dimensions. Resource scales would provide better predictors of marital functioning after the MI than single items.

10. Religion as a resource in chronic and acute illness is a needed area for further research. Although religious resources were a significant predictor of marital functioning for both husbands and wives in this study, the investigator's review of the literature revealed only one study in which the author addressed religion as a resource post-MI (Croog et al., 1972). Studies are needed to describe those aspects of religion (church attendance, religiosity, etc.) which are of the greatest value to families experiencing a crisis.

11. There is a need for nurses to develop tools to assess the spiritual health of clients. Spirituality is an area of assessment which is frequently neglected by health care professionals. The findings of this study indicated, however, that religious values are a significant resource for couples after an MI. Descriptive studies are therefore needed to delineate the elements inherent in the concept of spirituality.

12. There is also a need to conduct studies with marital dyads post-MI using marital functioning instruments which are multidimensional in nature. Because the marital functioning instrument employed

in this study was unidimensional, specific areas of significance to couples post-MI may not have been delineated.

13. Nursing intervention studies should be conducted to determine the significance of such interventions as a resource for couples post-MI. Subjects could be divided into experimental and control groups with the experimental group receiving a structured education program, while the control group receives routine medical treatment. The marital functioning instrument could be administered to both groups before and after the intervention to determine the effect of this treatment on the husbands' and wives' marital functioning scores.

Summary

In Chapter VI, the findings of this study were summarized and interpreted. Conclusions were drawn from the findings in relation to the conceptual model for nursing, and implications were delineated for nursing practice, education, and further research.

APPENDICES

APPENDIX A

LETTER OF INTRODUCTION TO THE PROJECT

MICHIGAN STATE UNIVERSITY

COLLEGE OF NURSING EAST LANSING • MICHIGAN • 48824

January 28, 1981

Mr. Mark Veenendaal, M.D.
Cardiac Clinic, Suite 220
405 W. Greenlawn
Lansing, MI 48910

Dear Dr. Veenendaal:

As a professional working with post myocardial infarction and other cardiac impaired clients, you are well aware of the pervasiveness of these problems upon the lifestyle of their victims and families. We are in the process of conducting a research project designed to collect descriptive data from marital couples who have recently experienced myocardial infarction. Specifically, we are studying men between the ages of 39 and 65 who have experienced an MI within the past year and their wives. It is not mandatory that both members of the marital unit participate in the study.

Volunteers are being asked to complete a five part questionnaire which would take approximately 45 minutes of their time. The materials covered include; perception of and adherence to the health regimen, level of functioning as a marital unit, and general socio-demographic data.

You could greatly aid our efforts by asking for participation from among your clients who meet the above criteria. We will gladly set up appointments to administer the questionnaire to the MI victims and their wives, at their convenience. Subjects will be free to withdraw from the study at any time. Also, we will be more than happy to share our findings with you and the participants.

We will be contacting you within the next few weeks in order to explain the study further, answer any questions you might have, and to clarify the administrative protocol. Our research methodology is designed to require no time from you personally.

Thank you for your consideration!

Sincerely,

Brigid A. Warren, R.N., M.S.
Assistant Professor of Nursing
Co-Principal Investigator

and

Nancy W. Kline, R.N., M.N.
Assistant Professor of Nursing
Co-Principal Investigator

BAW:NWK/dds

MICHIGAN STATE UNIVERSITY

COLLEGE OF NURSING EAST LANSING • MICHIGAN • 48824

January 28, 1981

George Kleiber, D.O.
Cardiac Clinic, Suite 220
405 W. Greenlawn
Lansing, MI 48910

Dear Dr. Kleiber:

This is a follow-up to the letter of January 22, 1980 in which we described our research project about the post-mycardial infarction rehabilitation experience. Since that time we have discussed the project with Dr. Walter Baird who advised us that our project had been approved by the Human Subjects Review Committee and the Board of Directors at Ingham Medical Center. Dr. Baird has given us permission to contact his patients to participate as subjects in this investigation. We are hoping that you will also agree to allow us access to your patient population. We will be happy to share the results with you upon completion of the study.

Again, this project will require no time from you personally, beyond the initial discussion and approval.

We will be contacting you soon to discuss the study further.

Thank you for your consideration!

Sincerely,

Brigid A. Warren, R.N., M.S. and Nancy W. Kline, R.N., M.N.
Assistant Professor Assistant Professor

BAW:NWK/sjt

APPENDIX B

PHYSICIAN LETTER TO POTENTIAL STUDY PARTICIPANTS

October 23, 1980

Dear _____:

I am writing to you about a research study being conducted by Nancy Kline and Brigid Warren, Assistant Professors in the Michigan State University College of Nursing. They are gathering information about how the experience of a heart attack has affected the lives of married couples like yourself. Through this study, they hope to gain information that will help nurses more effectively assist couples who have recently undergone a heart attack experience.

Agreeing to participate in this study would be of no cost to you other than approximately forty-five minutes of your time. Both of you would individually complete a five-part questionnaire which asks about yourself, your spouse, and the post-heart attack treatment plan. You would be free to withdraw from the study at any time and your identity would be kept strictly confidential.

Please consider their request for your participation. Complete the enclosed postcard and return it to the College of Nursing at your earliest convenience.

Thank you.

Sincerely,

Dr. Martin Jones, M.D.

MJ:ds

APPENDIX C

INSTRUCTION LETTER TO STUDY PARTICIPANTS

MICHIGAN STATE UNIVERSITY

COLLEGE OF NATURAL SCIENCE · SCHOOL OF NURSING EAST LANSING · MICHIGAN · 48824

Hello:

Thank you very much for agreeing to participate in our research study. Your assistance will help guide nurses and other health professionals in the care of people who have had a heart attack.

Following this letter, you should find five (5) questionnaires asking different questions about yourself, your spouse and the post-heart attack treatment plan. They will take about 45 minutes to complete.

Please answer each question as honestly as possible. There are no right or wrong answers.

PLEASE DO NOT CONSULT YOUR SPOUSE WHILE YOU ARE FILLING OUT THE FORMS.

Thank you again! If you have any questions or comments, feel free to contact any of the investigators.

Sincerely,

Nancy W. Kline

Nancy W. Kline, R.N., M.N.

Brigid Anne Warren

Brigid A. Warren, R.N., M.S.N.

NWK/BAW/jmm

APPENDIX D

INSTRUMENTS: MARITAL FUNCTIONING INSTRUMENTS AND SOCIODEMOGRAPHIC QUESTIONNAIRES

Pt. No. 9 1-4
Site _____
Date 5-6
Card No. 07 7-9
Rehab. Code 10-11
12

QUESTIONNAIRE # 4

Below is a series of statements dealing with the relationship between you and your wife since your heart attack. These statements are personal because they ask about a special relationship. Please be honest in selecting the statement which most closely reflects how you feel now. There are no right or wrong answers.

Please indicate the extent of agreement or disagreement with the statement by circling the appropriate response as follows:

1. Strongly agree
2. Moderately agree
3. Agree
4. Disagree
5. Moderately disagree
6. Strongly disagree

1. I feel I consider the household expenses before spending money on myself. 13

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

2. My heart attack is the worst thing that ever happened to me. 14

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

3. I am dissatisfied with the way my wife shares time with me. 15

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

4. Changes since my heart attack are not easy for me to deal with. 16

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

5. My wife is physically attracted to me. 17

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

For each statement below, circle the appropriate response which most reflects the relationship between you and your wife since your heart attack.

6. On matters of concern to both of us, I feel we make decisions together. 18

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

7. I feel responsible for the well-being of my wife. 19

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

8. I do not know my wife's goals in life since my heart attack. 20

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

9. Changes since my heart attack are easy for my wife to deal with. 21

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

10. Since the heart attack, my wife enjoys being physically close to me. 22

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

11. I owe a lot to my wife. 23

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

12. Since my heart attack, I feel we have a caring and loving relationship. 24

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

13. My heart attack is the worst thing that has happened to my wife. 25

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

14. My wife is able to recognize when I am facing a highly stressful situation. 26

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

15. I feel my wife considers household expenses before spending money on herself. 27

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

For each statement below, circle the appropriate response which most reflects the relationship between you and your wife since your heart attack.

16. My wife is dissatisfied with the time I spend with her. 28

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

17. Since my heart attack, I feel my wife should make the same health care changes that I must make. 29

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

18. I am physically attracted to my wife. 30

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

19. My wife enjoys spending some spare time doing things seperately from me. 31

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

20. Since my heart attack I show more affection toward my wife. 32

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

21. I find our sex life satisfying since my heart attack. 33

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

22. It is difficult for me to make time for family activities since my heart attack. 34

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

23. I feel I accept my wife's feelings. 35

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

24. I get upset when my wife spends time away from home. 36

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

25. My wife is able to support me during rough times. 37

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

For each statement below, circle the appropriate response which most reflects the relationship between you and your wife since your heart attack.

26. I feel I am free to grow as an individual. 38

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

27. My wife feels responsible for my well-being. 39

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

28. Compared to other couples, we quarrel a lot. 40

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

29. My wife knows what I want out of life. 41

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

30. I try to get my wife to change habits that irritate me. 42

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

31. Since my heart attack, my wife does not know my goals in life. 43

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

32. I enjoy being physically close to my wife. 44

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

33. I am able to recognize when my wife is facing a highly stressful situation. 45

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

34. Since my heart attack, my wife feels she should make the same health care changes that I must make. 46

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

For each statement below, circle the appropriate response which most reflects the relationship between you and your wife since your heart attack.

35. My wife owes a lot to me. 47

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

36. My wife finds our sex life satisfying since my heart attack. 48

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

37. It is difficult for my wife to make time for family activities. 49

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

38. Since my heart attack, I am unable to talk openly with my wife about things that bother me. 50

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

39. My wife shows more affection toward me since my heart attack. 51

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

40. I enjoy spending some spare time doing things separate from my wife. 52

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

41. I feel my wife accepts my feelings. 53

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

42. I feel we make a good couple. 54

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

Pt. No. 9 (1-2-3-4)

Site (5-6)

QUESTIONNAIRE #5

Date (7-8-9)

Card No. 11 (10-11)

Rehab. Code (12)

SOCIO-DEMOGRAPHIC

The following questions describe general things about yourself and your wife. Please answer all the questions to the best of your ability. There are no right or wrong answers. All information will be confidential!

1. Age: ____ ____ 13-14

2. Ethnic background: (Please check (X) appropriate category) 15

_____ White (1)	_____ Black (4)
_____ Oriental (2)	_____ Mexican-American (5)
_____ Indian (3)	_____ Other (6)

3. Marital status: (Please check (X) appropriate category) 16

_____ Married (1)	_____ Separated (3)	_____ Widowed (5)
_____ Single (2)	_____ Divorced (4)	

4. If married, age of your wife: _____ 17-18

5. How long have you been married to your current wife? _____ 19-20

6. Your educational level: (Please check (X) highest grade completed) 21

_____ (1) fewer than seven years of school (grades 1-6)

_____ (2) junior high school (grades 7-9)

_____ (3) partial high school (grades 10-11)

_____ (4) high school (completed 12th grade)

_____ (5) partial college education (3 years or less)

_____ (6) college education (4 years)

_____ (7) beyond 4 years of college

The following questions describe general things about yourself and your wife. Please answer all the questions to the best of your ability. There are no right or wrong answers. All information will be confidential!

7. Wife's level of education: (Please check (X) highest grade completed) 22

_____ 1 fewer than seven years of school (grades 1-6)

_____ 2 junior high school (grades 7-9)

_____ 3 partial high school (grades 10-11)

_____ 4 high school (completed 12th grade)

_____ 5 partial college education (3 years or less)

_____ 6 college education (4 years)

_____ 7 beyond 4 years of college

8. Are you presently working outside the home? ___1___ Yes _____ 2 No 23

a) If yes, are you working: _____ full time _____ part time 24

b) What is your current occupation (check(X) one)? 25

_____ 0 clerical

_____ 1 professional

_____ 2 executive in large-to-medium-sized business

_____ 3 skilled worker

_____ 4 semiskilled or unskilled worker

_____ 5 owner of business establishment

_____ 6 retired

_____ 7 currently unemployed, but looking for work

_____ 8 other (please specify): _____

c) How would you rate the stress associated with your job (check (X) one) 26

_____ 1 high stress

_____ 2 moderate stress

_____ 3 low stress

_____ 4 no stress

The following questions describe general things about yourself and your wife. Please answer all the questions to the best of your ability. There are no right or wrong answers. All information will be confidential!

9. Is your wife currently working outside the home? _____ Yes (1) _____ No (2) 27

a) If yes, is your wife working: _____ full time (1) _____ part time (2) 28

b) What is your wife's current occupation (check (X) one)? 29

_____ (0) clerical

_____ (1) professional

_____ (2) executive in large-to-medium-sized business

_____ (3) skilled worker

_____ (4) semiskilled or unskilled worker

_____ (5) owner of business establishment

_____ (6) retired

_____ (7) currently unemployed, but looking for work

_____ (8) other (please specify): _____

c) How would you rate the stress associated with your wife's job (check (X) one)? 30

_____ (1) high stress

_____ (2) moderate stress

_____ (3) low stress

_____ (4) no stress

10. What is your combined annual income? 31

_____ (0) 0 - 9,999

_____ (1) 10,000-19,999

_____ (2) 20,000-29,999

_____ (3) 30,000-39,999

_____ (4) 40,000-49,999

_____ (5) 50,000-59,999

_____ (6) 60,000-69,999

_____ (7) 70,000-79,999

_____ (8) greater than 80,000

11. How many children do you have? _____ 32-3

The following questions describe general things about yourself and your wife. Please answer all the questions to the best of your ability. There are no right or wrong answers. All information will be confidential!

12. How many children do you have living at home? _____ 34-35

13. Living arrangement: (please check(X) the description which best fits your current living arrangement) 36

_____ 1 married, living with wife alone

_____ 2 married, living with wife and children

_____ 3 married, living with wife, children and other relatives

_____ 4 unmarried, living alone (include widower, single, divorced)

_____ 5 unmarried, living with relative(s) or non-related person

_____ 6 other (please specify): _____

14. Have you been hospitalized more than one time for a heart attack? 37

_____ 1 Yes _____ 2 No 38-39

15. How long ago did you have your last heart attack? 40-41

_____ 1 # years _____ 2 # months

16. How severe was your last heart attack? 42

_____ 1 Very severe; I have a lot of heart damage

_____ 2 Moderately severe: I have some heart damage, but not a lot

_____ 3 Mild; I have only a little heart damage

_____ 4 I have no heart damage

The following questions describe general things about yourself and your wife. Please answer all the questions to the best of your ability. There are no right or wrong answers. All information will be confidential!

17. When you were in the hospital for your last heart attack, did you participate in a heart teaching program? (1)_____Yes (2)_____ No 43
If yes, please check (X) what topics were covered and if the information was presented to you alone, to your wife alone, or to both of you together.

_____	medication:	_____ 1	myself alone	_____ 2	my wife alone	_____ 3	my wife and myself	44
_____	diet:	_____ 1	myself alone	_____ 2	my wife alone	_____ 3	my wife and myself	45
_____	smoking:	_____ 1	myself alone	_____ 2	my wife alone	_____ 3	my wife and myself	46
_____	alcohol:	_____ 1	myself alone	_____ 2	my wife alone	_____ 3	my wife and myself	47
_____	exercise:	_____ 1	myself alone	_____ 2	my wife alone	_____ 3	my wife and myself	48
_____	stress:	_____ 1	myself alone	_____ 2	my wife alone	_____ 3	my wife and myself	49
_____	work activity:	_____ 1	alone	_____ 2	alone	_____ 3	and myself	50

18. Did your instruction include ways to deal with problems that could develop at home? _____ 1 Yes _____ 2 No 51

19. These statements deal with your current activity level. Please check the one statement that best describes your current activity level. 52

_____ 1 Completely disabled. Cannot carry on any self-care; totally confined to bed or chair.

_____ 2 Capable of only limited self-care; confined to bed or chair more than 50% of waking hours.

_____ 3 Walking about and capable of all self-care; but unable to carry out any work activities; up and about more than 50% of waking hours.

_____ 4 Restricted in physically strenuous activity, but walking and able to carry out work of a light or quiet nature, i.e., light housework, office work.

_____ 5 Fully active; able to carry out all pre-heart attack activities without restriction.

The following questions describe general things about yourself and your wife. Please answer all the questions to the best of your ability. There are no right or wrong answers. All information will be confidential!

20. Do you eat a special diet? Yes _____ (1) No _____ (2) 53

a) If yes, please check(X) all the responses that apply: 54

_____ (1) low salt

_____ (2) low calorie

_____ (3) low cholesterol

_____ (4) other (please specify): _____

21. In some communities there are special organized programs for people who have had heart attacks. Are you presently participating in any organized heart program?

_____ (1) Yes _____ (2) No 55

a) If yes, does the program include (Please check (X) all that apply):

_____ physical exercise 56

_____ relaxation techniques 57

_____ methods of stress reduction 58

_____ diet instruction 59

_____ general information about a heart attack 60

_____ participation of wives 61

_____ other (please specify): _____ 62

22. Do you have any chronic health problems? Yes _____ (1) No _____ (2) 63

a) If yes, please check (X) all that apply:

_____ arthritis 64

_____ cancer 65

_____ high blood pressure 66

_____ lung disease (asthsma, bronchitis, emphysema) 67

_____ sugar diabetes 68

_____ other (please specify): _____ 69

The following questions describe general things about yourself and your wife. Please answer all the questions to the best of your ability. There are no right or wrong answers. All information will be confidential!

23. **Before your heart attack, did you drink alcoholic beverages?** Yes _____ (1) No _____ (2) 70

a) **If yes, please specify:** 71

_____ (1) **occasional**

_____ (2) **weekends only**

_____ (3) **several times a week**

_____ (4) **one or two drinks a day**

_____ (5) **two to five drinks a day**

_____ (6) **more than five drinks a day**

24. **Before your heart attack, did you smoke cigarettes?** Yes _____ (1) No _____ (2) 72

a) **If yes, please specify:** 73

_____ (1) **less than 1/2 pack a day**

_____ (2) **1/2 - 1 pack a day**

_____ (3) **1 - 1-1/2 packs a day**

_____ (4) **1-1/2 - 2 packs a day**

_____ (5) **more than 2 packs a day**

CARD 12 (Keypunch: Dup. 1-9, [1 | 2] (10 11) Dup. 12)

25. Below is a list of things which happen in many families. Which of these have you experienced in your family during the <u>past</u> year? Please check (X) <u>all</u> that apply.

____ 1	menopause	13
____ 1	pregnancy	14
____ 1	an addition in the Household	15
____ 1	retirement (____ 2 your retirement ____ 3 your wife's retirement)	16
____ 1	moving	17
____ 1	marital problems	18
____ 1	divorce or separation from your wife	19
____ 1	major sickness or injury in your family	20
____ 1	death of a close friend or family member	21
____ 1	children left home	22
____ 1	got laid off or fired from work	23
____ 1	concern over aged parents or inlaws	24
____ 1	change in work hours or responsibility	25

PLEASE TURN TO THE NEXT PAGE

For questions 26 through 32, circle the response which best describes how you feel about that statement.

26. I am able to make contact with my doctor easily when I need medical attention. 26

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

27. I have cultural traditions which are a support to me. 27

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

28. My religion is a source of comfort and support during difficult times. 28

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

29. Socializing with friends is an important part of my life. 29

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

30. Since my heart attack, it has been necessary for me to limit socializing with friends. 30

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

31. My treatment plan will allow me to return to my pre-heart attack level of physical activity. 31

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

32. My current physical activity level is no different than before my heart attack. 32

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

PLEASE TURN TO THE NEXT PAGE

33. Is there anything about yourself or your wife, not covered in this questionnaire, that you would like to tell the investigators? 33

_____ Yes 1 _____ No 2

If yes, please describe below.

YOU HAVE COMPLETED ALL 5 QUESTIONNAIRES. PLEASE CHECK AND MAKE SURE YOU HAVE ANSWERED ALL QUESTIONS. THANK YOU!!

QUESTIONNAIRE # 4

Pt. No. 8 1-4
Site ____ 5=6
Date ____ 7-9
Card No. 08 10-11
Rehab. Code ____ 12

Below is a series of statements dealing with the relationship between you and your husband since his heart attack. These statements are personal because they ask about a special relationship. Please be honest in selecting the statement which most closely reflects how you feel now. There are no right or wrong answers.

Please indicate the extent of agreement or disagreement with the statement by circling the appropriate response as follows:

1. Strongly agree
2. Moderately agree
3. Agree
4. Disagree
5. Moderately disagree
6. Strongly disagree

1. I feel I consider the household expenses before spending money on myself. 13

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

2. My husband's heart attack is the worst thing that ever happened to me. 14

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

3. I am dissatisfied with the way my husband shares time with me. 15

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

4. Changes since my husband's heart attack are not easy for me to deal with. 16

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

For each statement below, circle the appropriate response which most closely reflects the relationship between you and your husband since his heart attack.

5. My husband is physically attracted to me. 17

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

6. On matters of concern to both of us, I feel we make decisions together. 18

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

7. I feel responsible for the well-being of my husband. 19

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

8. I do not know my husband's goals in life since his heart attack. 20

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

9. Changes since my husband's heart attack are easy for him to deal with. 21

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

10. Since the heart attack, my husband enjoys being physically close to me. 22

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

11. I owe a lot to my husband. 23

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

12. Since my husband's heart attack, I feel we have a caring and loving relationship. 24

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

13. My husband's heart attack is the worst thing that has happened to him. 25

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

14. My husband is able to recognize when I am facing a highly stressful situation. 26

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

For each statement below, circle the appropriate response which most closely reflects the relationship between you and your husband since his heart attack.

15. I feel my husband considers household expenses before spending money on himself. 27

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

16. My husband is dissatisfied with the time I spend with him. 28

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

17. Since my husband's heart attack, my husband feels I should make the same health care changes that he must make. 29

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

18. I am physically attracted to my husband 30

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

19. My husband enjoys spending some spare time doing things differently than me. 31

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

20. I show more affection toward my husband since his heart attack. 32

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

21. I find our sex life satisfying since my husband's heart attack. 33

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

22. It is difficult for me to make time for family activities. 34

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

23. I feel I accept my husband's feelings. 35

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

For each statement below, circle the appropriate response which most closely reflects the relationship between you and your husband since his heart attack.

24. I get upset when my husband spends time away from home. 36

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

25. My husband is able to support me during rough times. 37

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

26. I feel I am free to grow as an individual. 38

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

27. My husband feels responsible for my well-being. 39

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

28. Compared to other couples, we quarrel a lot. 40

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

29. My husband knows what I want out of life. 41

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

30. I try to get my husband to change habits that irritate me. 42

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

31. Since my husband's heart attack, my husband does not know my goals in life. 43

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

32. I enjoy being physically close to my husband. 44

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

For each statement below, circle the appropriate response which most closely reflects the relationship between you and your husband since his heart attack.

33. I am able to recognize when my husband is facing a highly stressful situation. 45

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

34. Since my husband's heart attack, I feel I should make the same health care changes that he must make. 46

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

35. My husband owes a lot to me. 47

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

36. My husband finds our sex life satisfying since his heart attack. 48

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

37. It is difficult for my husband to make time for family activities. 49

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

38. Since my husband's heart attack, I am unable to talk openly with my husband about things that bother me. 50

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

39. My husband shows more affection toward me since his heart attack. 51

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

40. I enjoy spending some spare time doing things different than my husband 52

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

41. I feel my husband accepts my feelings. 53

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

For each statement below, circle the appropriate response which most closely reflects the relationship between you and your husband since his heart attack.

42. I feel we make a good couple. 54

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

PLEASE GO ON TO THE NEXT SET OF QUESTIONS

QUESTIONNAIRE # 5

Pt. No. 8 (1-4)

Site _____ (5-6)

Date _____ (7-9)

Card No. 09 (10-11)

Rehab. Code _____ (12)

SOCIO-DEMOGRAPHIC

The following questions ask general things about yourself and your husband. Please answer all the questions to the best of your ability. There are no right or wrong answers. All information will be confidential!

1. Age: _____ 13-14

2. Ethnic background: (Please check (X) appropriate category) 15

_____ (1) White
_____ (2) Oriental
_____ (3) Indian
_____ (4) Black
_____ (5) Mexican-American
_____ (6) Other

3. Marital status (Please check (X) one appropriate category: 16

_____ (1) Married
_____ (2) Single
_____ (3) Separated
_____ (4) Divorced
_____ Widowed

4. If married, age of your husband: _____. 17-18

5. How long have you been married to your current husband? _____. 19-20

6. Your educational level (Please check (X) highest grade completed): 21

_____ (1) fewer than seven years of school (grades 1-6)
_____ (2) junior high school (grades 7-9)
_____ (3) partial high school (10-11)
_____ (4) high school (completed 12th grade)
_____ (5) partial college education (3 years or less)
_____ (6) college education (4 years)
_____ (7) beyond 4 years of college

7. Husband's level of education (Please check (X) highest grade completed): 22

_____ 1 fewer than seven years of school (grades 1-6)

_____ 2 junior high school (grades 7-9)

_____ 3 partial high school (10-11)

_____ 4 high school (completed 12th grade)

_____ 5 partial college education (3 years or less)

_____ 6 college education (4 years)

_____ 7 beyond 4 years of college

8. Are you presently working outside the home? Yes _____ 1 No _____ 2 23

a) If yes, are you working: 24

_____ 1 full time _____ 2 part time

b) What is your current occupation (check (X) one)? 25

_____ 0 clerical

_____ 1 professional

_____ 2 executive in large-to-medium-sized business

_____ 3 skilled worker

_____ 4 semiskilled or unskilled worker

_____ 5 owner of business establishment

_____ 6 retired

_____ 7 currently unemployed, but looking for work

_____ 8 other (please specify): _____.

c) How would you rate the stress associated with your job (check (X) one)? 26

_____ 1 high stress

_____ 2 moderate stress

_____ 3 low stress

_____ 4 no stress

9. Is your husband currently working outside the home? 27

Yes _____ No _____
1 2

a) If yes, is your husband working: 28

_____ full time _____ part time
1 2

b) What is your husband's occupation (check (X) one)? 29

_____ clerical
0

_____ professional
1

_____ executive in large-to-medium-sized business
2

_____ skilled worker
3

_____ semiskilled or unskilled worker
4

_____ owner of business establishment
5

_____ retired
6

_____ currently unemployed, but looking for work
7

_____ other (please specify): _____
8

c) How would you rate the stress associated with your husband's job (check(X) one)? 30

_____ high stress
1

_____ moderate stress
2

_____ low stress
3

_____ no stress
4

10. What is your combined annual income? 31

_____ 0 - 9,999
0

_____ 10,000-19,999
1

_____ 20,000-29,999
2

_____ 30,000-39,999
3

_____ 40,000-49,999
4

_____ 50,000-59,999
5

_____ 60,000-69,999
6

_____ 70,000-79,999
7

_____ greater than 80,000
8

11. How many children do you have?_____ 32-33

12. How many children do you have living at home? _____ 34-35

13. Living arrangement (please check the description which best fits your current living arrangement): 36

_____ 1 married, living with husband alone

_____ 2 married, living with husband and children

_____ 3 married, living with husband, children and other relatives

_____ 4 unmarried, living alone (include widow, single, divorced)

_____ 5 unmarried, living with relative(s) or non-related person

_____ 6 other (please specify): _____

14. Has your husband been hospitalized more than one time for a heart attack? 37

_____ 1 yes _____ 2 no

15. How long ago did your husband has his last heart attack? 38-39

_____ # years _____ # months 40-41

16. How severe was your husband's last heart attack? 42

_____ 1 Very severe; he has a lot of heart damage

_____ 2 Moderately severe; he has some heart damage, but not a lot.

_____ 3 Mild; he has only a little heart damage.

_____ 4 He has no heart damage.

17. When your husband was in the hospital for his last heart attack, did he participate in a heart teaching program? Yes ____ (1) No ____ (2) 43

If yes, please check (X) what topics were covered and if the information was presented to your husband alone, to you alone or to both of you together.

____ medication:	____ (1) my husband alone	____ (2) myself alone	____ (3) my husband and myself	44
____ diet:	____ (1) my husband alone	____ (2) myself alone	____ (3) my husband and myself	45
____ smoking:	____ (1) my husband alone	____ (2) myself alone	____ (3) my husband and myself	46
____ alcohol:	____ (1) my husband alone	____ (2) myself alone	____ (3) my husband and myself	47
____ exercise:	____ (1) my husband alone	____ (2) myself alone	____ (3) my husband and myself	48
____ stress:	____ (1) my husband alone	____ (2) myself alone	____ (3) my husband and myself	49
____ work activity:	____ (1) my husband alone	____ (2) myself alone	____ (3) my husband and myself	50

18. Did your instruction include ways to deal with problems that could develop at home? Yes ____ (1) No ____ (2) 51

19. These statements deal with your husband's current activity level. Please check the <u>one</u> statement that best describes your husband's <u>current</u> activity level. 52

____ (1) Completely disabled. Cannot carry on any self-care; totally confined to bed or chair.

____ (2) Capable of only limited self-care; confined to bed or chair more than 50% of waking hours.

____ (3) Walking about and capable of all self-care, but unable to carry out any work activities; up and about more than 50% of waking hours.

____ (4) Restricted in physically strenuous activity, but walking and able to carry out work of a light or quiet nature, i.e., light housework, office work.

____ (5) Fully active; able to carry out all pre-heart attack activities without restriction.

20. Does your husband eat a special diet? Yes _____ (1) No _____ (2) 53

a) If yes, please check all the responses that apply: 54

_____ (1) low salt

_____ (2) low calorie

_____ (3) low cholesterol

_____ (4) other (please specify): _____

21. In some communities there are special organized programs for people who have had heart attacks. Is your husband presently participating in any organized heart program? Yes _____ (1) No _____ (2) 55

a) If yes, does the program include (please check all that apply):

_____ physical exercise 56

_____ relaxation techniques 57

_____ methods of stress reduction 58

_____ diet instruction 59

_____ general information about a heart attack 60

_____ participation of wives 61

_____ other (please specify): _____ 62

22. Does your husband have any chronic health problems? Yes _____ (1) No _____ (2) 63

a) If yes, please check all that apply.

_____ arthritis 64

_____ cancer 65

_____ high blood pressure 66

_____ lung disease (asthsma, bronchitis, emphysema) 67

_____ sugar diabetes 68

_____ other (please specify): _____ 69

23. Before your husband's heart attack, did he drink alcoholic beverages? 70

Yes _____ 1 No _____ 2

a) If yes, please specify: 71

_____ 1 occasional

_____ 2 weekends only

_____ 3 several times a week

_____ 4 one or two drinks a day

_____ 5 two to five drinks a day

_____ 6 more than five drinks a day

24. Before your husband's heart attack, did he smoke cigarettes? 72

Yes _____ 1 No _____ 2

a) If yes, please specify: 73

_____ 1 less than 1/2 pack a day

_____ 2 1/2 - 1 pack a day

_____ 3 1 - 1-1/2 packs a day

_____ 4 1-1/2 - 2 packs a day

_____ 5 more than 2 packs a day

25. Below is a list of things which happen in many families. Which of these have you experienced in your family during the <u>past</u> year? Please check (X) <u>all</u> that apply.

____ 1	menopause	13
____ 1	pregnancy	14
____ 1	an addition in the household	15
____ 1	retirement (____ 2 your retirement; ____ 3 your husband's retirement)	16
____ 1	moving	17
____ 1	marital problems	18
____ 1	divorce or separation from your husband	19
____ 1	major sickness or injury in your family	20
____ 1	death of a close friend or family member	21
____ 1	children left home	22
____ 1	got laid off or fired from work	23
____ 1	concern over aged parents or inlaws	24
____ 1	change in work hours or responsibility	25

For questions 26-32, please circle the best response which describes how you feel about that statement.

26. My husband is able to make contact with his doctor easily when he needs medical attention. 26

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

27. My husband has cultural traditions which are a support to him. 27

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

28. My husband's religion is a source of comfort and support during difficult times. 2

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

29. Socializing with friends is an important part of my husbands life. 29

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

30. Since his heart attack, it has been necessary for my husband to limit socializing with friends. 30

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

31. My husbnad's treatment plan will allow him to return to his pre-heart attack level of physical activity. 31

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

32. My husband's current physical activity level is no different than before his heart attack. 32

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

PLEASE TURN TO THE NEXT PAGE

33. Is there anything about yourself or your husband, not covered in this Questionnaire, that you would like to tell the investigators? 33

_____ Yes
1

_____ No
2

If yes, please describe below.

YOU HAVE COMPLETED ALL 5 QUESTIONNAIRES. PLEASE CHECK AND MAKE SURE YOU HAVE ANSWERED ALL QUESTIONS. THANK YOU!!!

APPENDIX E

CONSENT FORM AND INVESTIGATORS' STATEMENT

MICHIGAN STATE UNIVERSITY
COLLEGE OF NURSING

CONSENT FORM

Investigators: Brigid A. Warren, R.N., B.S., M.S.N.
Assistant Professor of Nursing, Michigan State University
A107 Life Sciences Building
Telephone: 353-8686

Nancy Kline, R.N., B.S., M.N.
Assistant Professor of Nursing, Michigan State University
A129 Life Sciences Building
Telephone: 353-6499

Investigators Statement

The experience of a heart attack may affect peoples' lives in many ways. The purpose of this study is to gather more information about the experience of a heart attack and how it affects the lives of married couples like yourself. We hope that the information gained from this study will provide a better understanding of how nurses can assist couples who have recently undergone a heart attack experience.

Participation in this research study will require approximately forty-five minutes of your time. You will be asked to complete a questionnaire about the health information you have received, your present health practices and your view of your relationship as a couple since your heart attack. In addition, you will be asked information about yourself and your spouse.

Your participation in this study will in no way interfere with the care you are now receiving. There will be minimal risk or expense to you. You are free to ask questions now and throughout the study. You may withdraw from the study at any time without jeopardizing your future care. Your identity will be kept confidential and no information that could identify you will be used in any reports of the study. Responses you make on your questionnaire will not be revealed to your physician or spouse with any identifying information, unless you so request. The results of the study will be made available to you upon request.

Nancy W. Kline

Brigid Warren RN MSN

Signature of Investigator

Subject's Statement

I, the undersigned, agree to participate in this study about people who experience heart attacks.

I understand that this study may not benefit me personally but could help future patients with heart attacks.

I have been given the opportunity to ask questions and I understand that I may ask questions at any time during the study.

I understand that this study will not affect the care I am now receiving.

I also understand that my anonymity will be maintained and that my responses will be kept confidential.

I understand my participation in this study is voluntary and that I may withdraw at any time.

Signature of Subject Date

Witness Date

APPENDIX F

PROJECT APPROVAL LETTER FROM UCRIHS

MICHIGAN STATE UNIVERSITY

UNIVERSITY COMMITTEE ON RESEARCH INVOLVING
HUMAN SUBJECTS (UCRIHS)
258 ADMINISTRATION BUILDING
(517) 355-2186

EAST LANSING • MICHIGAN • 48824

July 13, 1981

Professor Nancy W. Kline
College of Nursing

Dear Professor Kline:

Subject: Proposal Entitled, "The Relationship Between Husband and Wife Perceptions of the Prescribed Health Regimen and Level of Function in the Marital Couple Post-Myocardial Infarction"

The above referenced project was recently submitted for review to the UCRIHS.

We are pleased to advise that the rights and welfare of the human subjects appear to be adequately protected and the Committee, therefore, approved this project at its meeting on July 6, 1981.

Projects involving the use of human subjects must be reviewed at least annually. If you plan to continue this project beyond one year, please make provisions for obtaining appropriate UCRIHS approval prior to the anniversary date noted above.

Thank you for bringing this project to our attention. If we can be of any future help, please do not hesitate to let us know.

Sincerely,

Henry E. Bredeck
Chairman, UCRIHS

HEB/jms

cc: Professor Brigid A. Warren

APPENDIX G

24-ITEM MARITAL FUNCTIONING INSTRUMENT

Final 24-Item Marital Functioning Instrument - Husbands

1. I am dissatisfied with the way my wife shares time with me. (Resolve)
2. My wife is physically attracted to me. (Affection)
3. On matters of concern to both of us, I feel we make decisions together. (Partnership)
4. I do not know my wife's goals in life since my heart attack. (Growth)
5. Since the heart attack, my wife enjoys being physically close to me. (Affection)
6. I owe a lot to my wife. (Affection)
7. Since my heart attack, I feel we have a caring and loving relationship. (Affection)
8. My wife is able to recognize when I am facing a highly stressful situation. (Adaptation)
9. My wife is dissatisfied with the time I spend with her. (Resolve)
10. I am physically attracted to my wife. (Affection)
11. I find our sex life satisfying since my heart attack. (Affection)
12. I feel I accept my wife's feelings. (Growth)
13. My wife is able to support me during rough times. (Adaptation)
14. I feel I am free to grow as an individual. (Growth)
15. My wife feels responsible for my well-being. (Partnership)
16. Compared to other couples, we quarrel a lot. (Affection)
17. Since my heart attack, my wife does not know my goals in life. (Growth)
18. I enjoy being physically close to my wife. (Affection)
19. My wife finds our sex life satisfying since my heart attack. (Affection)
20. It is difficult for my wife to make time for family activities. (Resolve)
21. Since my heart attack, I am unable to talk openly with my wife about things that bother me. (Adaptation)
22. My wife knows what I want out of life. (Growth)
23. I feel my wife accepts my feelings. (Partnership)
24. I feel we make a good couple. (Partnership)

Final 24-Item Marital Functioning Instrument - Wives

1. I am dissatisfied with the way my husband shares time with me. (Resolve)
2. My husband is physically attracted to me. (Affection)
3. On matters of concern to both of us, I feel we make decisions together. (Partnership)
4. I do not know my husband's goals in life since his heart attack. (Growth)
5. Since the heart attack, my husband enjoys being physically close to me. (Affection)
6. I owe a lot to my husband. (Affection)
7. Since my husband's heart attack, I feel we have a caring and loving relationship. (Affection)
8. My husband is able to recognize when I am facing a highly stressful situation. (Adaptation)
9. My husband is dissatified with the time I spend with him. (Resolve)
10. I am physically attracted to my husband. (Affection)
11. I find our sex life satisfying since my husband's heart attack. (Affection)
12. I feel I accept my husband's feelings. (Growth)
13. My husband is able to support me during rough times. (Adaptation)
14. I feel I am free to grow as an individual. (Growth)
15. My husband feels responsible for my well-being. (Partnership)
16. Compared to other couples, we quarrel a lot. (Affection)
17. Since my husband's heart attack, my husband does not know my goals in life. (Growth)
18. I enjoy being physically close to my husband. (Affection)
19. My husband finds our sex life satisfying since his heart attack. (Affection)
20. It is difficult for my husband to make time for family activities. (Resolve)
21. Since my husband's heart attack, I am unable to talk openly with my husband about things that bother me. (Adaptation)
22. My husband knows what I want out of life. (Growth)
23. I feel my husband accepts my feelings. (Partnership)
24. I feel we make a good couple. (Partnership)

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