

Social support and psychological adjustment to chronic coronary heart disease: Operationalization of Johnson's behavioral system model

No comprehensive theory of social support and psychological adjustment to chronic illness such as coronary heart disease (CHD) exists. This article reviews the literature on social support and adjustment to CHD from the perspective of Johnson's behavioral system model. It is argued that the quality of social support or nurturing is the major factor predicting cardiac crippled behaviors or dependency following myocardial infarction (MI). The variables of self-esteem, anxiety, depression, and perceptions of functional capacity are identified as variables affecting choices such as return to work and adherence to the treatment regimen and the behavioral outcome of dependency following MI.

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CORONARY HEART disease (CHD) remains the primary cause of mortality in the United States. Of the 1.5 million Americans who suffer a myocardial infarction (MI) yearly, almost 1 million survive¹ and must learn to cope with this chronic disease. Psychological adjustment to CHD is difficult, with an estimated 20% to 88% of patients suffering significant emotional distress following discharge after an MI.^{2,3}

Research has demonstrated that the quality of social support is a major determinant of adjustment to chronic CHD.⁴⁻⁸ Although quality is a difficult component to measure, Shumaker and Brownell⁹ imply that quality is in the eye of those involved in the relationship. They define social support as "an exchange of resources between at least two individuals perceived by the provider or the recipient to be intended to enhance the well-being of the recipient."^{9(p13)} Social support is inadequate in quality if it is not intended to enhance the well-being of the recipient, or if it is not what the patient desires.

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Presumably, social support is provided with positive intentions. But when is input provided by the supporter regarded as positive and when is it seen as nagging, patronizing, or overprotective?

ADJUSTMENT TO CHRONIC CORONARY HEART DISEASE

Many studies have found that patients suffering an MI have a profound emotional response that lasts for months or years.^{2,4-6,10-13} Patients express fears of recurrence and death, changes in self concept, and symbolic losses associated with heart disease. Common responses include anxiety, depression, insomnia, fatigue, irritability, changes in concentration, self-esteem, and libido.^{2,4} Minnesota Multiphasic Personality Inventory (MMPI) testing demonstrates differences from published norms and tested controls in anxiety, hypochondriasis, depression, and hysteria.²

Anxiety and denial are the predominant emotions experienced in the acute care setting; depression begins approximately two weeks after the event.² Approximately 20% to 88% of patients still report anxiety and depression a year or more after hospital discharge.² A poor emotional response impairs recuperation and rehabilitation and as many as 70% to 80% of cardiac patients fail to return to work when physiologically capable.^{5,14,15}

Two subsets of responses occur with some frequency, and significantly impair adjustment, defined as integration of a physical, psychological, or social change into one's self concept. These subsets are denial and invalidism. Denial during acute hospitalization has been shown to be asso-

ciated with better coping and adjustment.² However, for some patients referred to by Gullede as "counterphobic deniers,"^{3(p115)} an inability to accept any physical limitations and assistance leads to a disregard of symptoms and a self-destructive pattern of behaviors after hospital discharge.⁵ Spouses of MI patients frequently are concerned that clients ignore health care advice to rest and avoid lifting for a period of time after discharge from the hospital. Reminding clients of these limitations may cause spouses to be seen as overprotective.

Another group of clients exhibits excessive dependency behaviors commonly referred to as persistent cardiac invalidism manifested by difficulty returning to a satisfying and productive life,¹⁶ apparently because of the psychological response to the event.¹⁴ This diagnosis is manifested by the demanding of constant care and attention, helplessness, and exaggerated sick role behaviors.⁵ Klein and associates¹⁷ found that the features of invalidism usually begin early in the convalescent period, complicated by anxiety, fear, or depression. Cardiac invalidism may be inadvertently encouraged by a spouse who reinforces sick role behaviors.

Several authors have noted the relationship between emotional distress and perceptions of functional capacity, a complex relationship that could conceivably function in either direction.^{2,4,5,7,15} That is, it is difficult to determine whether beliefs about health status and functional capacity cause anxiety and depression¹⁸ or whether the dysphoric mood leads to perceptions of ill health and poor functional capacity.³

Whatever the cause, perceptions of ill health and poor functional capacity are

also associated with poor self-esteem.⁷ The combination of dysphoric mood, poor self-esteem, and perceptions of ill health paint the picture of the cardiac invalid. Recovery following an MI requires restoration of self-esteem¹⁹ suggesting the importance of interventions designed to change misconceptions and positively affect perceptions of health status in these clients. As spouses are often the major providers of social support during convalescence, they should be helped to develop realistic expectations. Restoration of the client's self-esteem is an important goal.

SOCIAL SUPPORT

Social support can be analyzed in terms of content and function. The content of social support involves a mutual exchange involving intimacy, and an opportunity for nurturant or reciprocal and socially motivated behavior.^{9,20} The function of social support is the provision of resources by one's social network.^{20,21} These resources commonly include: emotional support that provides a sense of belonging, which enhances self-esteem; tangible support with financial aid or services; informational support with the provision of cognitive guidance and advice; and appraisal support also referred to as the availability of someone in whom to confide.¹⁹ Socializing support is included by Fiore and colleagues⁸ to refer to belonging to a network of friends with common interests and in some cases might be seen as synonymous with appraisal support.

Many authors have described the effectiveness of social support, especially emotional and informational support¹⁸ in facilitating adjustment to chronic illness.^{6,19,20,22-25}

Social support that is effective results in positive self-evaluation, increased self-esteem, and control or mastery over the environment, feelings of worth, lovability, importance, and prestige.¹⁹ Social support that positively affects well-being and adjustment to chronic illness may be buffering the effects of stress.

The buffering hypothesis suggests that social support protects people from the pathogenic effects of the stress by preventing or attenuating the stress response. Social support bolsters one's ability to cope with demands so that situations are experienced as less stressful or one feels more able to cope with them.²¹ These effects are exerted by changing perceptions of situations, tranquilizing the neuroendocrine system to minimize stress reactivity, and/or facilitating healthful behaviors. However, social support can only minimize stress if the support is perceived by the recipient as supportive. Consistent with the definition, social support serves the function of nurturing only when the exchange of resources is seen as intended to enhance the well-being of the recipient.

Social support is now recognized as generating negative feelings when recipients fear loss of freedom or feel inadequate or uncomfortably indebted.²⁶ According to Wortman and Conway,¹⁸ support may be regarded as unhelpful

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because needing help carries the implicit assumption that one is incapable of solving one's own problems, which may lead to a loss of competence and self-esteem. Lowered self-esteem may cause depression, both of which may erode performance and lower self-esteem further.

Suls²⁷ noted that receiving help may create feelings of obligation to the provider. As reciprocity is an important component of the social support relationship, obligation may lead to discomfort and interpersonal tension if the receiver does not foresee an opportunity or the ability to reciprocate.

Feelings generated in the support provider may also influence the supportiveness of actions. For instance, the recipient's need for support may cause irritation and resentment in the provider if requests interfere with the provider's life style²⁷ or are perceived as inequitable.¹⁶ The donor may also experience resentment if the support provided is not appreciated. Irritation and resentment may be perceived by the recipient, lessening the effectiveness of the support provided.

Fiore and associates⁸ explain the negative aspects of social support as a feedback loop wherein unmet expectations decrease satisfaction with support and increase depression. People who are depressed may ask for more help and thereby increase the likelihood of having upsetting experiences, unmet expectations, and stress. In their study of 44 caregivers of spouses with Alzheimer's disease, interview and paper and pencil reports of caregiver upset with the quality of outside social support due to unfulfilled expectations or negative input was the best predictor of depression on the Beck Depression Inventory in caregivers.

When the effect of the disease was removed, upset with social support explained 37% of the variance. The negative affect of upset was a better predictor of depression than was the positive effect of buffering in preventing depression. Upset regarding informational support was strongest, explaining 29% of the variance. Subjects were presumably disappointed regarding the lack of problem-solving assistance provided and/or about being given unasked for or bad advice.

In a study of 100 depressed and nondepressed women, Wetzel²⁸ found that an incongruence between a woman's predisposition toward dependency and her perceptions of the environment resulted in significantly ($P < .0001$) more vulnerability to depression. Women with dependent personalities needed a family environment that relieved them of responsibility for major decision making, problem solving, assertiveness, or self-sufficiency. Women with independent personalities needed family environments that encouraged autonomy, major decision making, and problem solving. As a group, dependent women tended to be depressed. Wetzel suggested that the immediate antecedents of a depressive episode may be rooted in the family environment.

Shinn and colleagues note that "one person's distress can become another person's stressor and defeat the support process."^{29(p59)} They suggest that support is most effective when a fit exists between supporters and recipients along the dimensions of amount, timing, source, structure, and function. Effective support is a balance of support and challenge. The amount and quality should change as the stressor changes. The source of support is impor-

tant, with the spouse the key confidant, although other sources provide important dimensions of support. Characteristics of network structure, that is the organization or arrangement of individuals in one's social support network, also affect perceptions of support. For instance, low-density networks in which fewer individuals who know each other, seem to allow more freedom for change. Finally, the function of support should be congruent with the needs of the recipient. Optimal results are obtained when maximum autonomy is tolerated and support is provided only in areas where needed.

SOCIAL SUPPORT AND ADJUSTMENT TO CHD

Social support has been shown to be a major factor influencing self-esteem, perceptions of functional capacity, mood, and adjustment to CHD, although the most effective component of support is difficult to determine from these studies.^{2,4,6,7,13,15,18,19,23,24} Another finding is that wives of CHD patients have great difficulty coping with their husbands' disease, a factor that may interfere with their ability to be supportive. According to Crawshaw,³⁰ wives have the same fears, lack of knowledge, and misconceptions as their husbands. These problems assuredly affect wives' behavior. This author states, "[Wives] may also collapse under the strain of anxiety, become sick, depressed, and develop chest pains."^{30(p259)}

Protective behavior by spouses is a common response to the emotions elicited by the crisis of sudden severe illness in the client. The clinical literature is replete with anecdotes about overprotective, dominat-

ing, and oversolicitous wives of MI patients.^{3,10,12,31,32} Davidson noted that attempts at self change in CHD patients may be hindered by interfering¹⁹ spouses. Razin¹⁵ stated that rehabilitation success hinges on the family, especially the spouse, but family turmoil is common and peaks after discharge from the hospital. Protectiveness, assessed using a flexible, semi-structured interview approach, was not related to the mental state of either client or spouse or the quality of the marriage. However, protectiveness was positively correlated ($r = 0.35$) with coping, also assessed by interview, suggesting that in many situations protectiveness is perceived as nurturing and desired.

Wishnie and colleagues³² found guilt and overprotectiveness in a study of 18 wives of CHD patients interviewed 3 and 9 months following their husbands' MI. Solicitousness was of a punitive nature, thought to represent an indirect expression of suppressed anger. Stern and Pascale³³ also found guilt accompanying anxiety and depression in more than 25% of 38 spouses of CHD patients. Many spouses expressed guilt at having contributed to the disease by diet, stress, or not insisting on changes in exercise or cigarette smoking habits.^{3,34}

In a study of 82 wives of men experiencing their first MI, Mayou and colleagues¹³ found through interviews that wives continued to influence the rate and extent of convalescence a year after the acute event. One third of the wives were openly protective of their spouses. Approximately one third of the patients accepted the concern reluctantly while 15% rejected it outright. Gullledge³ commented on the dilemma wives experience: "If they show concern, they are accused of being punitive and

overprotective, but if they limit their concern and attempt to avoid unnecessary helplessness in their husbands, they are considered unsympathetic."^{3(p117)}

Hyman³⁵ addressed this issue of the appropriate family response to illness in a study of 116 clients in the early stages of chronic illness. He argued that social processes shape their response to the ailment: "The receipt of preferential treatment by a patient on the brink of the sick role raises the odds that he will plunge into it."^{35(p329)} Hyman suggested that protective and solicitous treatment led to changes in self concept and may mediate the relationship between preferential treatment and disability.

Reif⁷ also found that the social relationship and messages from associates affected the response to CHD. This author explored the social and psychological impact of CHD in 31 subjects following a first MI using intensive interviews, participant observation, and record reviews to determine methods of coping. Data were collected from subjects, close associates, and in some cases employers, physicians, and disability-certifying agencies. A central finding was that cardiac disability was the result of social processes, not merely biological impairment. Men with CHD exhibited an increase in perceived disability following concern and warnings of caution by spouses, friends, and employers.

According to Waltz,⁶ the quality of the marital relationship is a major factor influencing social support and adjustment. Longitudinal data were collected using questionnaires and interviews from over 600 male cardiac patients and their spouses to determine the effect of the marriage on quality of life following MI. Marital status,

the emotional quality of the relationship, and long-standing marital stressors were found to have both direct and indirect effects on negative and positive affect.

Consistent with the buffering hypothesis, Waltz found that satisfaction with the marital relationship led to emotional closeness and less negative affect, and facilitated coping. Conflicts arose out of inadequate support. Both negative social resources and inadequate social support increased the risk of cardiac invalidism after an MI. As other studies have found, self concept played a pivotal role in the relationship between social support and adjustment to CHD. The strongest predictor of low self-esteem was marital dissatisfaction. Interpersonal problems hindered adaptation and eroded self-esteem and mastery. Marital discord arose from dissatisfaction with the wife's behavior after the acute coronary event. Conversely, "an emotionally close marriage provides the individual with a secure and coherent environment in which he can gradually structure his ways of looking at himself and his world."^{6(p803)}

A NURSING PERSPECTIVE ON SOCIAL SUPPORT AND ADJUSTMENT

Johnson's behavioral system model has been used to guide a nursing perspective into social support and adjustment to CHD. According to Johnson,^{36,37} individuals strive for equilibrium through behavioral strategies. Stressors such as illness interfere with this stability by causing a state of tension perceived as discomfort or displeasure. This instability necessitates expenditure from a finite pool of energy in an attempt to cope with stressors. Stress

reduction occurs through the use of new behavioral patterns or reestablishment of old ones that have been reasonably effective in the past.

Behavioral patterns can be conceptualized within a structure of eight³⁸ subsystems—achievement, affiliative, aggressive or protective, dependency, eliminative, ingestive, restorative, and sexual—that make a whole that is greater than the sum of the parts. That is, an individual cannot be fully understood based on an analysis of his or her isolated parts.³⁹ Theoretically, the structure of each subsystem is comprised of a goal motivated by basic drives, sets, choices, and the resulting behavior.

Goals are motivated by universal drives; observed behavior is influenced by goals. Goals have different meanings for various individuals. The strength or intent of a goal may change over time and situations. Immediately following an MI the client's drive for affiliative goals may be stronger than those for the achievement subsystem.

A set refers to the tendency to act in certain ways in particular situations. Sets may be influenced by societal norms, group status, family life style, culture, perceptions, cognitive abilities, and accrued knowledge. Sets can be either preparatory or perseverative. Preparatory sets describe what one focuses on or attends to in situations. For instance, following an MI the patient may focus on fatigue and interpret this symptom as a sign of permanent poor functional capacity even though it could be transient or caused by medications. Perseverative sets refer to habits. The term perseverative is derived from the verb to persevere suggesting that these sets are relatively stable and resistant to change. Coping styles and mood traits are exam-

ples of perseverative sets. Sets affect both choices and resulting behavior.³⁸

Choices refer to the realm of options from which one chooses in a given situation. The range of choices depends on past experience, perceptions of the present situation, learning, external restraints, and physical and emotional abilities.³⁸ Availability of resources is a major factor influencing choices. Major choices commonly made by MI patients include whether or not to return to work and their level of adherence to a treatment regimen.

Only the behavior is observable, but the other components of the subsystem structure can be inferred from behavioral analysis. Development and stability of the subsystems require a constant supply of the functional requirements of protection, nurturance, and stimulation. The structural parts, function, and operation of each subsystem are linked and open.

THEORY OF ADJUSTMENT TO CHRONIC CHD

The crisis of an MI produces physiological, psychological, and social instability that may require unique behavioral patterns to cope with the situation. The choice of behaviors depends on the functional requirements and structural components—goal, set, choice—of each subsystem. Poor adjustment to CHD can be viewed as a malfunction of the dependency subsystem.

Dependency is a normal human need that decreases with maturation but fluctuates during times of stress.⁴⁰ An assumption of Johnson's model is that changes in the structure and dynamics of the dependency subsystem are associated with inade-

quate fulfillment of the functional requirement for nurturing. The goal of this subsystem is succor through approval, attention, recognition, and physical assistance from others.⁴¹

Dominant-dependency needs may result in cardiac invalidism; excessive denial and self-destructive behaviors may result from fear of or lack of attention to dependency needs. Consistent with Johnson's theoretical perspective, cardiac invalidism, or dependency behavior is thought to increase in dominance when nurturing or social support is perceived as inadequate in quality.

Meeting dependency needs through social support can facilitate adjustment to CHD.^{7,19,20,22-25} For instance, a close marital relationship can facilitate psychological adjustment to CHD.^{13,15,19} Waltz⁶ found more positive emotions in those satisfied with their marriage, which facilitated adjustment.

Social support that is inadequate in quality can hinder adjustment. Reif⁷ argued that cardiac disability was the result of primarily social processes. This finding suggests that although left ventricular function affects energy levels and perceptions of functional capacity, social processes may be a stronger influence predicting adjustment and recovery. Waltz⁶ found that lack of support was a source of considerable stress, hindered psychosocial adjustment, and increased risk of psycho-

logical and social invalidism following an MI. Others have found that dependency slows recovery^{3,16} and is associated with depression.²⁸

Many of the variables identified in this article are "sets," such as normal patterns of response, which directly or indirectly affect adjustment through their influence on other variables. For instance, social support influences adjustment through its effects on self-esteem, mood, and perceptions of functional capacity.^{2,4,6,7,13,18-20,23,24} Support providers who communicate that the client is still lovable and capable positively influence adjustment. Conversely, clients with perceptions of poor functional capacity, also a set, may develop poor self-esteem.⁵

Self-esteem influences one's ability to give and receive nurturing. Spouses with poor self-esteem may not be supportive; clients with poor self-esteem may not be able to accept even temporary dependency while they accept nurturing. Support may lower self-esteem and lead to depression and perceptions of poor functional ability.^{7,18,35}

Mood states such as anxiety and depression may influence choices such as whether or not to return to work or adhere to treatment recommendations. Anxious clients may have strong dependency needs because they are worried about their health. Those who perceive their health as poor may develop anxiety and depression.¹⁸ A dysphoric mood may result in poor adjustment because of effects on perceptions,⁵ energy, self-esteem, motivation, and the marital relationship. Spouses who are anxious and depressed are unsupportive³⁰; inadequate support can cause client depression.⁸

Support providers who communicate that the client is still lovable and capable positively influence adjustment.

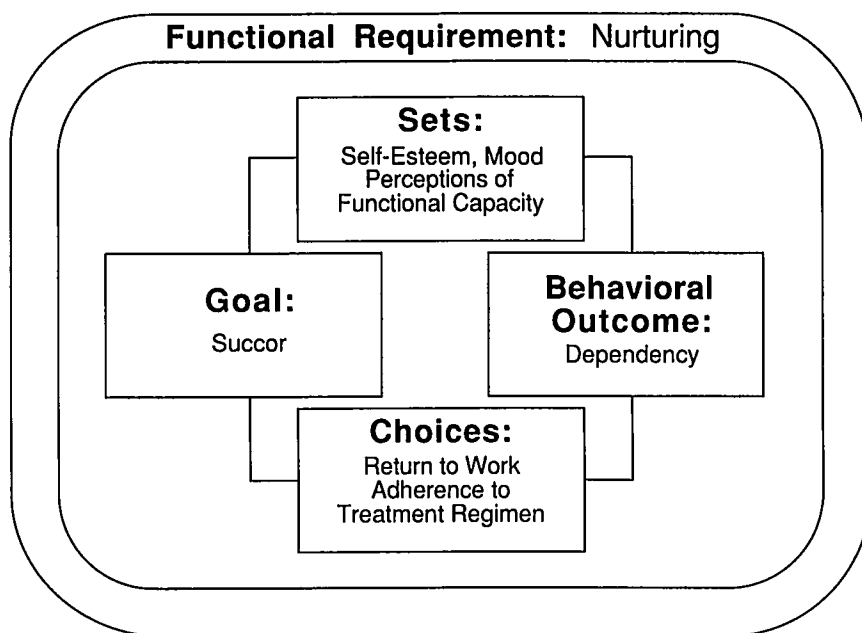


Fig 1. Hypothesized relationships between the major patient variables as predicted by Johnson's behavioral systems model.

Choices are influenced by subsystem goals, sets, and functional requirements. For instance, choices about return to work *v* early retirement may be influenced by perceptions about functional capacity following an MI (a set). These perceptions may be influenced by lay beliefs,⁴² communications from the social support network,^{8,35} or health care professionals. Energy level following an MI can influence perceptions and thereby behavioral choices such as adherence to an exercise program in an attempt to conserve energy. However, believing that one is not physically capable, that is, has a poor functional capacity, may decrease energy levels by causing depression.⁶

This theory of adjustment to chronic CHD (Fig 1) has implications for nursing research and practice. Research is needed

to determine if adjustment to an acute coronary event, which is aborted or modified through aggressive interventions such as percutaneous transluminal coronary angioplasty, thrombolysis, or surgery, is similar to that described in the MI literature. Data about the manner in which functional and structural variables influence dependency behaviors are also needed. The types of social support that are associated with dependency following an acute coronary event need to be identified. This would allow nurses to predict which CHD patients are at risk and help spouses to modify behavior patterns so as to be interpreted as supportive, not over-protective. If research can demonstrate a relationship between nurturing, sets, choices, and dependency behaviors, support will be gained for Johnson's theoretic

cal perspective. Once characteristics of adjustment to chronic CHD as influenced by social support are clearly determined through research this theory may have implications for other chronically ill patient populations.

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The purpose of this article was to review the literature on social support and psychological adjustment to CHD from John-

son's conceptual perspective with the intention of formulating a theoretical framework for research and practice. The variables of social support, self-esteem, anxiety, depression, and perceptions of functional capacity, were consistently noted in the literature as factors affecting adjustment to CHD. These variables have been discussed as factors affecting the structure and function of the dependency subsystem manifested by psychologically crippled behaviors in cardiac invalidism.

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