

Hope and Social Support as Coping Resources for Adults Waiting for Cardiac Transplantation

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On identifie le soutien affectif et l'espoir comme des stratégies importantes pour les personnes qui sont dans l'attente d'une transplantation cardiaque. Cependant, on ne sait que peu de choses sur leurs sources de soutien affectif ou si ce soutien et l'espoir sont des facteurs qui réduisent l'anxiété de la période d'attente. Cette étude décrit les sources d'interaction sociale des personnes qui étaient dans l'attente d'une transplantation cardiaque, et explore si le soutien social et l'espoir leur ont servi de stratégies efficaces. Trente et une personnes dans quatre centres de transplantation au Canada ont rempli des questionnaires sur le soutien social (Norbeck Social Support Questionnaire), l'espoir (Miller Hope Scale), et la façon de se débrouiller (Jalowiec Coping Scale). Des entretiens par téléphone ont fourni des données supplémentaires sur les façons dont les conduites utiles au soutien sont perçues. L'espoir était le seul facteur qui contribuait à la différence dans la façon de se débrouiller ($R^2 = .41$). Les résultats de l'étude indiquent que les sources de soutien social des personnes interrogées (notamment la famille, les ami(e)s, et les professionnel(le)s de la santé) étaient importantes. Les données fournissent un aperçu des conduites qui, selon les personnes qui attendent une transplantation, apportent un soutien, et suggèrent des stratégies pour maintenir l'espoir dans la période d'attente.

Previous research has indicated that interpersonal support and hopefulness are important for people waiting for cardiac transplantation. However, little is known about their supportive networks, or whether support and hope are factors that enable coping during the waiting period. This study described the social networks of cardiac transplant candidates, and explored whether social support and hope contributed to effective coping. Thirty-one individuals in four Canadian transplant centres completed questionnaires regarding social support (Norbeck Social Support Questionnaire), hope (Miller Hope Scale), and coping (Jalowiec Coping Scale). Telephone interviews provided supplementary data about perceptions of helpful support behaviours. Study findings suggest that hope was the only variable that contributed to coping effectiveness ($R^2=.41$) and that respondents' social networks (primarily family, friends, and health professionals) were important sources of support. The data provide insight into the behaviours that transplant candidates find supportive and suggest strategies to maintain hopefulness during the waiting period.

For adults waiting for cardiac transplantation the waiting period may be the most stressful period of time (Kuhn, et al., 1990). Persons with end-stage cardiac disease live with the knowledge that cardiac transplantation is necessary for survival, and may feel anxious, depressed, or helpless (Christopherson, 1987; House & Thompson, 1988; Kuhn, Davis, & Lippman, 1988), or engage in anticipatory grieving (Christopherson, 1976). Research regarding psychosocial adjustment in the waiting period for cardiac transplantation has

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identified hope and interpersonal support as important to an individual's adaptation (Buzzell, 1990; House & Thompson, 1988). However, the existing research is primarily anecdotal and limited to the perspective of the professional caregiver. Further empirical study is warranted to explore hope and support from the perspective of the individual waiting for transplantation, and to describe the relationships among hope, support, and coping in this population. This knowledge may help health professionals to facilitate coping in persons who are waiting for cardiac transplantation.

Social support has been conceptualized as multidimensional (Gottlieb, 1983), and defined as interpersonal transactions with laypersons and professionals that may express positive affect; affirm or acknowledge that one has appropriate beliefs, interpretations, or is engaging in appropriate behaviours; and/or provide direct help or aid (Kahn & Antonucci, 1980). Social support, as coping assistance, may affect an individual's appraisal of the stressful situation by helping them change the situation or the meaning of the situation (Thoits, 1986). Affective support may help a person manage the negative or distressing feelings associated with the waiting period (emotion-focused coping); affirmational support may help a person appraise the situation differently (cognitive reappraisal); and aid may provide practical assistance or information that helps an individual manage problems during the waiting period for cardiac transplantation (problem-focused coping). Furthermore, uncontrollable events, such as illness, are presumed to elicit needs for emotional support and emotion-focused coping (Cutrona & Russell, 1990).

Hope may mediate the consequences of stressful situations by facilitating the appraisal of events as manageable (Lazarus & Folkman, 1984), by maintaining goal-directed behaviour (Stotland, 1969), and by positively affecting coping persistence (Folkman, et al., 1991). Hope was conceptualized as a cognitive process (Korner, 1970; Miller, 1989) and defined as a) the anticipation of a continued good state, an improved state, or a release from a perceived entrapment, and b) the anticipation of a future that is based upon mutuality, personal competence, psychological well-being, and purpose and meaning in life (Miller, 1986). Hopefulness may be partially contingent on supportive relationships (Miller & Powers, 1988).

Effective coping was conceptualized as the prevention or mitigation of distress within a particular situation as perceived by the individual (Lazarus & Folkman, 1984); the stressful situation is not overcome, but there is a balance between management of the problem and regulation of distress. For this study effective coping was defined as the subjective ability of an individual to manage the distress associated with waiting for cardiac transplantation. Social support and hope may enable coping during the waiting period, but these conceptual links have not been tested.

Review of the Literature

During the waiting period for cardiac transplantation, individuals struggle with the threat of further physical deterioration, the fear of dying, and the unpredictable timing of donor organ availability (Christopherson, 1987). One factor which may mediate the stress of the waiting period is social support. The importance of social support in promoting adaptation in people with a cardiac illness is well documented. Studies of people post-MI have shown that support is related to adherence to cardiovascular risk reduction strategies (O'Reilly, & Thomas, 1989) and to enhanced coping with problems and restrictions (Dracup, Meleis, Baker, & Edlefsen, 1984; Garding, Kerr, & Bay, 1988; Schulte, Kester, Pluym, & Sutherland, 1990; Wiggins, 1989). The literature regarding psychosocial adaptation in cardiac transplant populations points to the importance of support to an individual's adaptation in the pre-transplantation period, but inadequately describes the available social support. Studies have reported that families share the emotional burden and provide practical support (McGary-Busé & Pieper, 1990; Mishel & Murdaugh, 1987), and that health professionals provide information (Grady et al., 1993; Buzzell, 1990; Levenson & Olbrisch, 1987) and emotional support (Kuhn, Davis, & Lippman, 1988). Although peer support from previous transplant recipients has been acknowledged (Kuhn, Davis, & Lippman, 1988), it has not been well described. Further research is warranted to understand the specific supportive behaviours available from the social network, including the relative importance of specific sources and types of support.

The maintenance of hope in the waiting period has been identified as a potentially important coping strategy (Christopherson, 1987; House & Thompson, 1988), but has not been empirically examined. Hope has been related to psychosocial adaptation in persons with cancer (Herth, 1989; Hilton, 1989) as well as acute (O'Malley & Menke, 1988) and chronic illness (Foote, Piazza, Holcombe, Paul, & Daffin, 1990; Rideout & Montemuro, 1986). Foote and colleagues (1990) found significant positive correlations between hope and social support as well as hope and self-esteem in a group of multiple sclerosis patients. In studies of individuals with cancer (Herth, 1989; Hilton, 1989), hope has been identified as an important variable in coping. O'Malley and Menke (1988) found no relationship between perceived hope and stress among persons who had experienced a first myocardial infarction.

Interview data from studies involving acute (Miller, 1989) and chronically ill populations (Herth, 1990), have documented factors that promote or threaten hopefulness. Factors that foster hope include having relationships with significant others, receiving reassurance from professional caregivers that the stress of a situation is manageable, using cognitive strategies to decrease

the threat of a situation, exhibiting humor, having conviction in a positive outcome, having goals in life, and having confidence in therapy as well as a sense of personal control. Threats to hope include the physical and/or emotional distancing of significant others, being devalued as a person, and uncontrollable pain (Herth, 1990; Miller, 1989). Some of these factors reflect social support.

One qualitative study documented the experience of waiting from the perspective of a group of individuals ($n=8$) in one cardiac transplant centre (Buzzell, 1990). Support needs appeared to be high upon initial acceptance onto the waiting list, but individuals appeared to cope well and exhibit a positive attitude if the waiting period was less than six months. If the wait exceeded six months, some deterioration in health occurred, coping mechanisms and morale broke down, and individuals again required support.

In summary, the literature documents the potential usefulness of support and hope as coping resources for ill populations, including individuals waiting for cardiac transplantation. However, the specific types of support provided, and the duration and perceived importance of this support, have not been investigated in this population. Furthermore, no study has explored the relationships among hope, support, and coping. One study has suggested that support needs, morale, and coping ability might fluctuate over time (Buzzell, 1990). Further research is indicated to examine whether the length of time waiting for cardiac transplantation influences these factors.

Research Questions

The research questions guiding the study were:

What are the sources, types, and duration of social support for people awaiting cardiac transplantation?

What are the relationships among support, hope, and coping effectiveness for people awaiting cardiac transplantation?

What are the relationships among length of time on the waiting list, coping effectiveness, and the levels of support and hopefulness for people awaiting cardiac transplantation?

Method

A descriptive, correlational design was used to address the research questions. Data were collected through three mailed questionnaires and a telephone interview.

Sample

Self-reported data were collected from a convenience sample of people on the waiting list for cardiac transplantation at four Canadian transplant centres. The following demographic data were collected: age, gender, marital status, and length of time waiting for cardiac transplantation. Participants had been previously evaluated and approved for cardiac transplantation, were waiting in the community served by the transplant centre, were age 18 years or older, and could read, speak, and write English. Those who were waiting in hospital for cardiac transplantation were excluded, as hospitalization is indicative of physiologic instability and these individuals may not have been well enough to participate.

Instruments

The Norbeck Social Support Questionnaire (NSSQ), developed by Norbeck, Lindsey, and Carrier (1981), was used to measure social support. The NSSQ measures three functional aspects of social support (affect, affirmation, and aid) and five structural aspects (network size, source of support, duration of relationships, frequency of contact, and network loss). Individuals were asked to identify members in their social network and to categorize each relationship as spouse, family, friend, health professional, clergy, previous transplant recipient, or other. Respondents then rated each network member on a five-point Likert scale according to the amount of affective, affirmational, and practical support perceived to be available, the length of time the respondent had known them, and the frequency of contact with them. Network losses during the preceding six months were measured by the number of support persons lost and the amount of support no longer available. Internal consistency of the NSSQ is reported to be high, with intercorrelations between all functional items (.72–.97), structural items (.88–.96), and between functional and structural items (.69–.97) (Norbeck et al., 1981). In this sample of people waiting for cardiac transplantation ($n=31$), Cronbach's alpha was .98. The support score in this study was the summative total of affective, affirmational, and aid scores for each respondent due to the intercorrelatedness of the functional items which may not be measurably distinct. One week test-retest reliabilities have been reported from 0.85 to 0.92 (Norbeck, Lindsey, & Carrier, 1983). Concurrent validity is reported through significant positive correlations with the Personal Resource Questionnaire (Brandt & Weinert, 1981). Support scores derived from the NSSQ are reported to buffer life stress as measured by the Life Experiences Survey (Sarason, Johnson, & Seigal, 1978); and therefore have predictive validity (Norbeck et al., 1983).

The Miller Hope Scale (MHS) developed by Miller and Powers (1988) was used to measure: 1. satisfaction with self, others, and life, 2. avoidance of hope threats, and 3. anticipation of a future. It is a 40-item scale, with a

six-point Likert format ranging from 1 (very strongly disagree) to 6 (very strongly agree). Responses are summed into a total score; a higher score reflects greater hopefulness. Cronbach's alpha for internal consistency is .93 with a two-week test-retest reliability of .82 (Miller & Powers, 1988). In the current study (where $n=31$), Cronbach's alpha was .94. The MHS has been positively correlated with the Psychological Well-Being Scale (Campbell, Converse, & Rodgers, 1976), the Existential Well-Being Scale (Paloutzian & Ellison, 1982), and negatively correlated with the Beck Hopelessness Scale (Beck, Weissman, Lester, & Trexler, 1974).

The Revised Jalowiec Coping Scale (Jalowiec, 1987) was used to measure coping effectiveness. Participants in this study indicated on a Likert scale from 0 (never used) to 3 (often used) how often they used each of 60 coping strategies while waiting for a heart transplant. They then rated how helpful/effective each strategy was in managing the stress of waiting, using a Likert scale from 0 (not helpful) to 3 (very helpful). Jalowiec (1987) grouped the coping strategies into eight coping styles: confronting, evasive, optimistic, fatalistic, emotive, palliative, supportive, and self-reliant. In this study, total effectiveness scores (a sum score of the effectiveness of all coping styles) were used as a measure of coping effectiveness, with higher total scores indicating greater coping effectiveness. The following psychometric properties were reported from an earlier study for a group of cardiac transplant candidates ($n=43$): the three-month test-retest reliability scores $r=.78$, $p<.05$ for total use and $r=.59$, $p<.05$, for effectiveness and the internal consistency coefficient was $r=.92$ for total use and $r=.93$ for effectiveness (Jalowiec, 1987). Total effectiveness scores had predictive validity with respect to self-reported stress ($r=-.89$, $p=.003$) (Jalowiec, 1987). Normative data were not reported. In the current sample ($n=31$), Cronbach's alpha was .89 for total use. An internal consistency score for total effectiveness could not be calculated due to missing values that represented coping strategies not used by respondents.

Procedure

Study questionnaires were distributed by the local coordinator or designate to interested people who met the inclusion criteria. A telephone interview was conducted by the principal investigator approximately one week after the questionnaires were distributed. Completed questionnaires were returned to the principal investigator. Reminder letters were mailed to participants if their questionnaires had not been received by two weeks after the telephone interview.

As the NSSQ is a global measure of support, a supplementary telephone interview was conducted to document the specific supportive behaviours from members of the social network, and to assess why these sources or types of support were helpful. Each person in the study was asked the following

questions about the support persons they listed on the NSSQ: "Thinking only of _____, what does this person do that helps you cope during this period of waiting? Can you tell me why this was/is important to you?" The interviews were audiotaped, transcribed verbatim, and content analyzed using manifest content analysis (Catanzaro, 1988). A unit for coding was considered any phrase, sentence, or passage that referred to the type or source of support. Categories for type of support were based on Kahn's (1979) theoretical conception of social support. The categories for source of support were based on the classification system used by the NSSQ. Inter-rater reliability was established as 85% for units coded and 83% for coding categories. Frequency tabulations were calculated to describe the source and type of support.

Results

The sample ($n=31$) consisted of 27 men and 4 women with an age range of 40 to 63 years ($M=52.4$). Participants were predominantly Caucasian ($n=30$) and married ($n=25$). Length of time on the waiting list ranged from 14 to 540 days (median=90 days). Analysis of variance revealed no significant differences in hope ($F(3,27) = 0.14, p=.93$), support ($F(3,27) = 1.28, p=.30$) or coping effectiveness ($F(3,27) = 2.79, p=.10$) among people waiting in the four transplant centres. There were no significant differences between men and women in support ($t(29) = .77, p=.45$), hope ($t(29) = .11, p=.91$) or coping effectiveness ($t(29) = 1.77, p=.09$), but since the number of women in this sample is small these results should be interpreted with caution. There was no significant difference in support between married and unmarried respondents ($t(29) = .84, p=.40$). Therefore spouses were included in the general support category of family in the analysis.

Source, Type, and Duration of Support

Participants had a median social network size of 11 members (Range: 3 to 27). All participants identified family members, and the majority included friends ($n=23$), and health professionals ($n=24$) as individuals who provided them with support. Only a few participants included previous cardiac transplant recipients ($n=4$), clergy ($n=4$), and miscellaneous others ($n=5$) as members of their network. The length of time respondents had known their network members had a significant positive correlation with support ($r=.89, p=.0001$) and with the amount of contact respondents had with their network ($r=.96, p=.0001$). Most individuals ($n=17$) had not lost anyone from their social network within the last six months.

Interview data provided in-depth information regarding supportive behaviours from the social network. Supportive behaviours were grouped into categories that reflected the three main types of support: affect,

affirmation, and aid. A category of others was created to group additional supportive behaviours that were identified by respondents as helpful or supportive (See Table 1). Respondents described families and friends as providing all types of support, but families provided the most affective and practical support, which were perceived by respondents as important during

Table 1

Type and Source of Support Coded from Interview Data of Persons Waiting for Cardiac Transplantation (n=31)

SUPPORT CATEGORY		DEFINITION	Network Category That Provided The Majority of this Support
MAJOR	MINOR		
AFFECT	Understanding	The effort of the support person, through talking or listening, to share the individual's experiences and/or feelings	Family (42%)*
	Trust	Confidentiality of shared information, belief in the abilities of the individual, or knowledge of the unconditional accessibility of the support person	HCP** (58%)
	Love	Devotion, affection, or interpersonal intimacy	Family (52%)
	Encouragement	Urging the individual to persist in problem resolution, and endure distress or frustration, or reassuring of a positive outcome	Family (55%)
	Concern	Consideration for the importance or severity of the problem's impact, or for the problem itself	Family (65%)
AFFIRMATION	Affirmation	Supporting the appropriateness or rightness of an individual's thoughts, needs, experiences, or feelings	Family (19%)
	Social Comparison	Using other people as sources of information for self-evaluation	Transplant Recipients (13%)
AID	Things	Material good, food, or housing	Family (35%)
	Money	Financial support by lending or donating money, or by securing financial assistance	Family (13%)
	Information	Explanations, suggestions about a problem or situation, or referral to another helping resource	HCP (58%)
	Time	References to non-specific current or future interpersonal contact through visits, by telephone, or by mail	Family (58%)
	Labour	Assistance with household chores and responsibilities including taking care of children and providing transportation	Family (68%)
OTHER	Distraction	Activities that provide stress release or do not involve the problem	Family (29%)
	Support for another	Supporter for another person in respondent's social network	Family (10%)

*Percentage of respondents in this sample that identified this category. **HCP = health care professional.

the waiting period. Although health professionals usually provided information about cardiac transplantation and respondents' health status ($n=18$), they also provided affirmation for respondents' experiences ($n=4$), and aid in the form of housing in the area of the transplant centre ($n=8$). In addition, they gave affective support by reinforcing the benefits of transplantation by reassuring respondents a donor heart would eventually become available ($n=13$), and by being accessible ($n=18$), understanding ($n=6$), and concerned ($n=4$). Physicians and nurses associated with the transplant centre were the primary sources of professional support. Previous cardiac transplant recipients generally provided encouragement ($n=4$) that the waiting period could be survived and physical well-being regained. Their support was also valued because they were understanding ($n=1$), accessible ($n=1$), and provided information ($n=2$), and gave support to spouses ($n=1$). Clergy were characterized as important sources of affective support because they were understanding ($n=2$), concerned ($n=1$), and encouraging ($n=1$).

Relationships Among Hope, Support, and Coping Effectiveness

The mean level of hope for the sample was 185.9 ($SD=25.48$), which is high compared to a score of 164.46 ($SD=16.31$) obtained elsewhere from a sample of 522 healthy adults (Miller & Powers, 1988). The mean total functional support in this sample was 203 ($SD=119$), which is comparable to normative data reporting total functional support as 201.9 ($SD=95.87$) (Norbeck et al., 1983). Coping effectiveness scores ranged from 31 to 128 (maximum possible score=180) with a mean of 72 ($SD=22.12$). Respondents rated the optimistic and supportive styles as most effective, while the evasive and emotive styles were rated as least effective. Table 2 presents the coping styles adjusted mean scores for use and effectiveness. Adjusted means were calculated to correct for the uneven number of items in each coping style.

Scatter plots were constructed prior to examining the statistical relationships among hope, total functional support, and coping effectiveness. Support was initially calculated as the sum score of affect, affirmation, and aid

Table 2

Adjusted Mean (SD) Use and Effectiveness Scores for Coping Styles ($n=31$)

Use		Effectiveness	
Optimistic	– 2.4 (.4)	Optimistic	– 2.0 (.6)
Self-reliant	– 1.9 (.6)	Supportive	– 1.9 (.7)
Supportive	– 1.9 (.6)	Confronting	– 1.5 (.6)
Confronting	– 1.7 (.5)	Self-reliant	– 1.4 (.6)
Palliative	– 1.4 (.5)	Palliative	– 1.2 (.5)
Fatalistic	– 1.2 (.6)	Fatalistic	– .7 (.4)
Evasive	– 1.0 (.4)	Evasive	– .6 (.3)
Emotive	– .9 (.6)	Emotive	– .2 (.3)

from all sources, then calculated for the specific sources of family, friends, health professionals, previous transplant recipients, and clergy. Pearson Product Moment Correlation was used to examine relationships between study variables. Hope, support from transplant recipients, and support from health professionals all had significant positive relationships with coping effectiveness (Table 3). A regression model, using forward stepwise multiple regression (Woods, 1988), was constructed with the variables entered in this order: hope, support from transplant recipients, and support from health professionals. Hope was entered first since it was correlated most highly with coping effectiveness, followed by recipient support, and professional support. Hope was the only significant predictor in the model (Table 4).

Table 3

**Pearson Product Moment Correlations Between
Support, Hope, and Coping Effectiveness (n=31)**

(a) Support and Coping Effectiveness	
	Coping Effectiveness
Total Support	.21
Support from Recipients	.46***
Support from Professionals	.42***
Support from Families	.13
Support from Friends	-.11
Support from Clergy	-.12
(b) Hope and Coping Effectiveness	
	Coping Effectiveness
Total Hope	.49***
Hope Scale 1	.46***
Hope Scale 2	.38*
Hope Scale 3	.53***

Note: Hope Scale 1 = satisfaction with life, self & others; Hope Scale 2 = avoidance of hope threats; Hope Scale 3 = anticipation of a future.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 4

**Forward Stepwise Multiple Regression on Coping Effectiveness with
Hope, Transplant Recipient Support, and Health Professional Support
as Predictor Variables (n=31)**

Source	df	Sum of Squares	Mean Square	F value	p
Model	3	6062.09	2020.69	6.38	.0021
Error	27	8554.61	316.83		
$R^2 = .41$					
Parameter	Estimate	t value	p		
Intercept	-.15	.01	.99		
Hope	.36	2.77	.01*		
Recipient Support	.53	1.86	.07		
Professional Support	.06	.54	.59		

* significant

Total hope scores did not correlate with total functional support, but the MHS factor Avoidance of Hope Threats had a significant positive correlation with support ($r=.42$, $p=.02$). Total support was not significantly correlated with either of the remaining two MHS factors [Satisfaction with life, self, and others, ($r=.13$, $p=.47$); and Anticipation of a Future, ($r=.04$, $p=.81$)].

Length of Time Waiting, Hope, Support, and Coping Effectiveness

To examine whether there were differences in hope, support, and coping effectiveness according to length of time on the waiting list, respondents were divided into two groups at the median of 90 days waiting. Total functional support, support from friends, and support from families after 90 days on the waiting list significantly declined (Table 5), however, the validity of these results should be interpreted with considerable caution. The use of a cross-sectional design, the non-random sample, and the possibility of multiple sources of unexplained variation between individuals within each time period limits the interpretation of significant findings.

Table 5

Mean Levels of Hope (SD), Support, and Coping Effectiveness Less than 90 Days Waiting and More than 90 Days Waiting for Cardiac Transplantation (n=31)

Variable	Less than 90 days		More than 90 days		t value	p value
Hope	186.9	(20.5)	189.0	(26.2)	.24	.81
Total Support	250.2	(148.2)	164.13	(60.4)	2.08*	.04
Family Support	135.06	(65.1)	97.6	(46.8)	1.79**	.05
Friend Support	63.3	(68.7)	25.7	(22.8)	2.01*	.05
Professional Support	38.7	(45.4)	31.2	(23.2)	.57	.57
Recipient Support	4.8	(18.6)	3.7	(9.2)	.19	.84
Clergy Support	3.4	(10.2)	3.1	(8.3)	.18	.85
Coping Effectiveness	74.1	(22.0)	72.8	(20.9)	.16	.87

Note: Theoretical range: Miller Hope Scale 0-240; Jalowiec Coping Scale 0-180.

*two-tailed t-test; ** one tailed t-test.

Discussion

This study described the types, sources, and duration of support available to a group of people waiting for cardiac transplantation, examined the premise that social support and hope would be related to coping, and described levels of support, hopefulness, and coping in the waiting period. Principal sources of support for respondents were family, friends, health professionals, previous transplant recipients, and clergy. Family and friends were the most commonly identified sources of support, followed by health professionals. This finding is consistent with studies of people with serious illness (Miller, McMahon, Garrett, & Ringel, 1989; Rose, 1990; Winefield & Katsikitis, 1987; Wortman & Conway, 1985). Cardiac transplant recipients and clergy were identified by

only a few respondents as providing support. Social support was associated with both the duration of relationships and frequency of contact with network members. The size of the social network ranged from 3 to 27 individuals, perhaps reflecting differences in support requirements and the availability of specific types of support. The median of 11 persons is consistent with findings by House and Kahn (1985) that networks vary from 5 to 10 persons. There was no difference in support between married and unmarried respondents. This is not consistent with previous research (Wills, 1985), and may be explained by the small number of unmarried respondents. An alternative explanation might be that other members of the social network provided more support at a time when needs were recognized as being high.

In this study, families were frequent sources of affective support and were characterized by respondents as loving, concerned, and encouraging; family members also provided them with opportunities for emotional venting. These supportive behaviours have been identified in research involving other ill populations (Dakof & Taylor, 1990; Gardner & Wheeler, 1987; Dunkel-Schetter, 1984). Individuals seek intimacy and the opportunity to talk about feelings in close relationships where they are likely to reveal personal vulnerabilities and seek support for their emotional reactions to stress (Thoits, 1986). Families also provided most of the practical aid that likely reduced the physical limitations imposed by cardiac disease. Support from families was, however, not significantly associated with coping effectiveness. The success of support as a coping resource depends on how well it meets recipients' stress-related needs (Cohen & Wills, 1985; Shumaker & Brownell, 1984). The threat of further physical deterioration and the uncertainty of donor organ availability are sources of stress in the waiting period (Buzzell, 1990; Christopherson, 1987) that are not amenable to change by family members. Furthermore, Porter et al. (1992) reported having family members worry about them was one of the three most stressful factors identified by people waiting for cardiac transplantation. Emotional over-involvement by the support provider can interfere with problem-solving or be intrusive (Coyne, Wortman, & Lehman, 1988). In the current study, it is possible that families were both a source of support and stress for respondents.

Health professionals were an important source of information regarding the transplant protocol and respondents' health status. This finding is also consistent with previous research in this population (Buzzell, 1990; Grady et al., 1993; Levenson & Olbrisch, 1987). Information is typically provided by health professionals (Dakof & Taylor, 1990) and can be particularly important when environmental stresses exceed a person's available knowledge and problem-solving ability (Wills, 1985). In addition, health professionals provided affective support in the form of encouragement (e.g., reinforcement of the benefits of transplantation, reassurance that a donor heart would even-

tually become available), affirmational support that helped respondents normalize their perceptions, and practical aid in the form of housing near the transplant centre. Professionals were also trusted by respondents.

Interview data suggested that support from transplant recipients was important for those respondents who listed them as part of their social network. Kuhn, Davis, and Lippman (1988) previously documented that transplant recipients can provide valuable support; it is frequently appreciated because such individuals have first hand experiential knowledge of stresses (Dakof & Taylor, 1990; Borkman, 1976). In the current study, transplant recipients were perceived to be understanding, and supported the spouses of respondents. Thoits (1986) argues that empathetic understanding from socially similar others who faced similar stressors is the condition under which coping assistance should be most effective. Transplant recipients may also have served as role models by demonstrating that the waiting period can be survived and transplantation can result in improved physical health. If the study sample had been larger, support from transplant recipients might have explained a portion of the variance in coping effectiveness.

Hope has been related to psychosocial adaptation in acute (O'Malley & Menke, 1988) and chronic illness (Herth, 1989; Hilton, 1989; Rideout & Montemuro, 1986). Findings in this study indicate that hope contributed to respondents' ability to cope while waiting. Aspects of hope such as psychological well-being, positive expectations for the future, and avoidance of hope threats (Miller & Powers, 1988) may help to manage the distress of the waiting period in cardiac transplantation. Although specific factors that sustain hope were not identified in this study, avoidance of hope threats had a significant positive correlation with total social support, suggesting that hope was partially sustained through relationships with the social network. In the current study, most respondents had not lost anyone from their social network, and the principal sources of emotional support were family members, friends, and health professionals. Emotional support and affirmational support can help persons under stress maintain self-esteem and feelings of control, thereby allowing them to persist in coping efforts (Pearlin, Lieberman, Menaghan, & Mullan, 1981). Furthermore, Raleigh (1992) reports that contact with significant others contributes to hopefulness during chronic illness.

Conclusion

Limitations

The cross-sectional design of the study does not permit causal inference. While hope may reduce stress in the waiting period for cardiac transplantation, continued stress can, in turn, decrease hope. The non-random recruit-

ment of respondents, small sample size, and relative homogeneity of the sample used in the current study limit the application of findings to other individuals waiting for cardiac transplantation. The fact that coping effectiveness was not related to support could be due to the global nature of the NSSQ, which might not reflect the full range of supportive behaviours identified from the interview data. The study also used a self-reported measure of coping effectiveness, but did not measure adaptational outcomes.

Implications for Research

This study examined support, hope, and coping at one point in the waiting period for cardiac transplantation. A longitudinal study could examine changes in support needs and resources, hope-inspiring strategies, coping, and adaptational outcomes over time and explicate causal linkages. Further research could also test the impact of possible factors that influence hopefulness (e.g., stress, severity of illness, personal control), and the receipt of support (e.g., coping styles, orientation toward help-seeking). Although this study emphasized supportive behaviours, it is apparent that support is provided at a cost to the support person; there was a decrease in support from families and friends after three months. These individuals provided the bulk of affective and practical support and had the most frequent contact with respondents. Additional research is therefore required to understand the support person's needs.

Implications for Nursing

Individuals with end-stage cardiac illness may wait for up to a year or more for a donor organ, potentially coping for an extended period of time with a stressful situation. The findings of this study suggest that hope can enhance coping during this waiting period. Hope may be most important when stressful situations are uncertain (Korner, 1970), and when the source of stress is not amenable to change by the person. Furthermore, the availability of significant sources of support such as family, friends, health professionals, and cardiac transplant recipients can perpetuate hopefulness. Since research identifies hope and support as important coping resources (Raleigh, 1992), nurses should become familiar with the hope-inspiring strategies documented in studies of people with life-threatening (Miller, 1989), terminal (Herth, 1990), and chronic illnesses (Raleigh, 1992). Finally, strategies that mobilize and enhance the hope and support of these people could be tested.

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