DO PARTNERS' PERSONALITY RESOURCES ADD TO THE PREDICTION OF PATIENTS' COPING AND QUALITY OF LIFE?

KERSTIN E.E. SCHRÖDER[1,*] and RALF SCHWARZER[2]

[1]*Syracuse University, U.S.A.*
[2]*Freie Universität Berlin, Germany*

This study examines the effects of personal resources of both heart patients and their close social partners on patients' coping and quality of life. Generalized personal resources (self-efficacy beliefs, dispositional optimism, self-regulation competence) and outcomes were assessed by questionnaire 1–3 days before surgery ($n = 122$) and again six months later ($n = 50$). Outcome variables were coping styles, social resources (social support and social integration), emotional states, and further measures of quality of life. Patients' personal resources were dominant in the prediction of most of the outcomes. Partners' resources were uniquely related to social support, social integration, and quality of life as perceived by the patients. Further, partners' personality resources predicted changes in patients' loneliness and energy levels during the six-month interval.

KEY WORDS: Partner, personality, chronic disease, coping, quality of life, self-regulation.

Research on coping with chronic disease has widely focused on personal and social resources and their impact on recovery, adaptation, and overall quality of life. Usually, the patient's own stress resistance resources, such as optimism, self-efficacy, or internal control beliefs, are considered as the main sources and predictors of coping success. Compared to the numerous studies examining patients' personality in coping with chronic illness, personal resources provided by close social partners have received little attention. Although there is evidence that intimate social relationships and coping styles of social partners affect coping and well-being of patients, the impact of partners' personality on patients' coping and adaptation has not yet been sufficiently explored.

The present study on coping with severe heart disease extends previous research with regard to three aspects. First, the impact of partners' personality resources on patients' well-being and adaptation was analyzed, thus filling a gap in current coping research. Second, the combined effects of different personal resource factors on coping with chronic disease were investigated in contrast to the usual single-trait approach. Third, in addition to well-known expectancy-based personality variables (general self-efficacy beliefs, dispositional optimism), a newly developed personality resource called "self-regulation competence" was included. Theoretically, this variable integrates positive self-beliefs, emotional stability, and will-power as sources of general self-management abilities. It complements generalized positive belief measures usually employed as predictors of coping and coping outcomes.

---

*Corresponding author. Syracuse University, Center for Health and Behavior, Department of Psychology, Syracuse, NY 13244-2340, U.S.A. Fax: +1/315/443-4123; E-mail: keschrod@psych.syr.edu.

Individual Resources in Coping with Chronic Disease

Research on stress and coping has almost exclusively focused on an individual perspective. Numerous studies examined the impact of personal resources on coping with chronic disease, most of them focusing on expectancy-based personality factors such as dispositional optimism, internal control beliefs, and self-efficacy beliefs. According to Lazarus and Folkman's theory of stress and coping (1984, 1987), positive beliefs influence the primary and secondary appraisal of potentially stressful situations, decreasing perceived threat and promoting an optimistic evaluation of coping resources and coping options. Dispositional optimism is one of the most often used and best proven predictors of overall coping success among chronically ill people (Carver *et al.*, 1993; Desharnais, Godin, Jobin and Valois, 1990; Fitzgerald, Tennen, Affleck and Pranksy, 1993; Friedman *et al.*, 1992; Scheier and Carver, 1987, 1992; Scheier *et al.*, 1989; Stanton and Snider, 1993). Similarly, many studies report beneficial effects of patients' generalized internal control beliefs on adjustment and well-being (Lefcourt and Davidson-Katz, 1991; Peterson and Seligman, 1987; Taylor and Armor, 1996; Taylor, Lichtman and Wood, 1984; Terry, 1992; Thompson, Sobolew-Shubin, Galbraith, Schwankowski and Cruzen, 1993). Further, generalized self-efficacy beliefs have been found to predict patients' coping and adaptation (Cunningham, Lockwood and Cunningham, 1991; Hobfoll and Walfisch, 1984; Schröder, Schwarzer and Konertz, 1998; Schwarzer and Schröder, 1997). In sum, these studies provide strong evidence that general positive beliefs are connected with a multitude of positive outcomes such as physical and emotional well-being, recovery from surgery, compliance with medical advice, proactive and effective coping behaviors, adaptation to chronic disease, quality of social relationships, social support, and overall quality of life.

However, the predominance of an individual perspective in coping research has left many questions open for further research. Little is known about the impact of significant others' resources on coping and adaptation of chronically ill people. When used as predictors in stress and coping research, partners' personality resources have been related to their own psychological adjustment as, for example, in research on caregivers' burden (Bookwala and Schulz, 1998; Clark and Hartman, 1996; Coyne and Fiske, 1992; Hooker, Monahan, Bowman, Frazier and Shifren, 1998; Markiewicz, Reis and Gold, 1997; Pagel, Erdly and Becker, 1987; Park and Folkman, 1997; Welleford, Harkins and Taylor, 1995).

The Meaning of Close Social Partners in Coping with Chronic Disease

Close social relationships are likely to affect well-being and adaptation of chronically ill people in several ways. First, spouses and other close social partners can be regarded as the most important source of social support and social integration. The impact of partnerships and social support on psychological well-being, physical health, recovery, and adaptation is well-documented. Emotional support and the quality of social relationships seem to be the most important factors in coping with chronic disease (Aymanns, Filipp and Klauer, 1995; Coyne and Delongis, 1986; Coyne and Fiske, 1992; DeLongis and O'Brian, 1990; Kulik and Mahler, 1993; Manne and Zautra, 1989; Rook, 1984, 1990; Schröder, 1997). Social support is expected to unfold its beneficial effects in part by protecting or enhancing patients' self-efficacy or internal control beliefs (Antonucci and Jackson, 1987; Coyne and Fiske, 1992). Hobfoll, Freedy, Lane and Geller (1990), for example, have pointed out that social support does not only fulfill instrumental functions, but also has self-defining and identity-stabilizing effects in coping with stress.

Partners' ability to provide support or "coping assistance" (Thoits, 1986) and to establish and keep high-quality, low-conflict social relationship with chronically ill patients might depend on partners' personality resources. Partners' personality might influence patients' well-being and functioning through appraisal processes and attitudes affecting patients' stress levels, self-efficacy beliefs, self-esteem, feelings of acceptance, and satisfaction with social and marital life. Personality resources of partners are likely to be related to both personal as well as social resources of the patients. This connection between resources of patients and their partners suggests that relationships between partners' personality and patients' well-being are not unique but may be explained on account of patients' own personal resources instead. However, the role of close social partners includes much more than protecting and supporting patients' positive self-evaluations. Partners' way of coping can add social stress or relieve from stress and demands. Coyne and Fiske (1992) also point to the meaning of a caregiver's ability and initiative in directly assisting the patient to adjust to the demands of changing life-styles, daily routines, and habits. Further, close partners play a key role in the establishment and maintenance of a supportive social network. Thus, partners' personality can be expected to contribute to patients' well-being and quality of life above the influence of their own dispositions. Close social partners suffering from burn-out, depression, hopelessness, and helplessness, and who have difficulty adapting to the demands of role- and life-style changes, are likely to add to the stress imposed by the illness instead of buffering against distress.

The impact of partners' resources on patients' coping success should depend on the specific outcome of interest. Personal resources of close social partners can be expected to add mainly to the prediction of social resources and social outcomes of coping. They will be of little significance in the prediction of outcomes strongly related to self-evaluations (e.g., self-esteem, self-satisfaction), which should be mainly accounted for by patients' own personal resources.

Self-Regulation Competence: A Global Personal Resource Factor

Given that psychological adjustment to chronic disease involves the whole personality of patients and their partners, a single trait approach seems arbitrary and largely determined by researchers' specific interests. Questions regarding the relative impact of patients' and partners' resources require a broader, more encompassing approach. In addition to the generalized positive beliefs discussed above, personality factors such as volitional strength or commitment (Kobasa, 1979, 1990) and emotional stability (Clark and Watson, 1991; Eysenck, 1981) can be expected to affect stress levels and adaptation. However, apart from expectancy-based personality factors, more encompassing multidimensional stress resistance resources such as hardiness (Kobasa, 1990), sense of coherence (Antonovsky, 1990), or action orientation (Kuhl, 1994) have rarely been used as predictors of coping and adaptation among chronically ill people (Schröder, 1997).

The present study used multiple personality measures for the prediction of patients' coping success with both patients' and partners' *overall personality resources*. A personality variable called *self-regulation competence* was included in addition to typical expectancy-based resources (generalized self-efficacy beliefs, dispositional optimism). Self-regulation competence comprises three kinds of self-management abilities. *Coping competence* is defined as a general stress resistance factor in the face of failure and negative life events and is expected to affect mental and physical health by buffering against stress, feelings of helplessness, and the arousal of negative emotions. People high in coping competence trust in their abilities. They are not easily discouraged by failures but keep their self-confidence

and focus on alternative ways and means to achieve their goals. They are good problem solvers and tend to make flexible use of a multitude of different coping techniques in order to adapt emotionally and/or behaviorally to a difficult situation. *Volitional competence* refers to an autonomous personality that is best described by a combination of strong commitments, a prime orientation by internal guidelines and goals, and self-involvement in freely chosen activities (Deci and Ryan, 1991; Kuhl, 1992, 1994). Autonomy and commitment are regarded as important determinants of mental and physical health (Antonovsky, 1990; Deci and Ryan, 1991; Grossarth-Maticek and Eysenck, 1996; Kobasa, 1990). Volitional competence refers to higher-order or "upper-level" volitional functions and abilities such as autonomous decision making based on one's personal values, goals, and interests, the ability to resist social pressure, and the ability to assert oneself and to stand up for ideas and personal convictions. *Habitual self-control* is the ability to control the enactment of difficult intentions that are threatened by conflicting impulses, fatigue, discouragement, or temptation. In contrast to volitional competence, habitual self-control is regarded as a "lower-level" volition factor because the ability to control one's behavior does not necessarily imply autonomous goal setting. Habitual self-control can also be activated as a response to external demands and recommendations. Habitual self-control includes specific but important cognitive functions in realizing one's intentions. People high in habitual self-control are more likely to succeed in controlling unpleasant but goal-relevant behaviors such as keeping a healthy diet or exercise on a regular basis if this is necessary for their health. They easily establish new habits and employ a variety of cognitive and behavioral techniques in order to support motivation and to resist temptation, and they are less likely to experience relapse.

A measure of self-regulation competence was used in a study on coping with coronary heart disease and was shown to predict a multitude of coping outcomes (Schröder, 1997). In the present study, self-regulation competence is used as a complement to typical expectancy-based personality resources (self-efficacy beliefs, optimism). Instead of the usual single-trait approach, a combined measure of five variables was used in order to analyze coping and adaptation as a function of the entire resourceful personality.

Hypotheses of the Present Study

The goal of the present study is to determine the influence of personal resources of both patients and close social partners on patients' coping with severe heart disease. As an indicator of both patient's and partner's resourceful personality, measures of general self-efficacy beliefs, dispositional optimism, and self-regulation competence were combined. Multiple criteria of coping were used, including emotional states, coping styles, multiple indicators of quality of life, and social support. The analyses focused on the following hypotheses.

1. Both patients' and caregivers' personal resources should be positively related to patients' psychological adjustment as measured by coping styles, social support, quality of life, and physical well-being. Since we expected patients high in personal resources to be involved with more resourceful partners, a certain overlap in the prediction of these outcomes could be expected.

2. We expected that unique contributions of partner's personality would depend on the type of outcome. We assumed that personal resources of patients dominate in the prediction of outcomes involving self-evaluations and self-efficacy beliefs such as perceived energy, satisfaction with self, and emotional well-being. Compared to these outcomes,

unique contributions of partners' resources were more likely in the prediction of outcomes referring to the social relationships of the patients such as satisfaction with social support and social life.

3. Both patients' and partners' personality resources should contribute to recovery after surgery and should promote the return to an active, everyday social life. Thus, it was expected that personal resources assessed before surgery would predict *changes* in emotional well-being, energy levels, and social support over an extended period of time following surgery.

4. Again, partner's personality was expected to add mainly to the prediction of changes in outcomes referring to their social relationships (e.g., perceived social support).

METHOD

Design and Procedure

A longitudinal study was conducted using a sample of patients scheduled for heart surgery. Resources and outcomes were assessed by questionnaire at two times, once one to three days before surgery, and a second time six months later. The six-months interval was chosen in accordance with similar studies investigating recovery from open-heart surgery (e.g., Scheier *et al.*, 1989) and following recommendations of the surgeons. Symptoms and side-effects caused by the surgical treatment can be expected to last several months but usually disappear within six months, thus marking the point of physical recovery from surgery. Patients were contacted after admission in the cardiac surgery center of the Charité- Hospital Berlin and asked to participate in the study. They were informed about the purpose of the study, which was explained as an investigation of the effects of severe heart disease and heart surgery on well-being and quality of life. They were assured that data would be treated anonymously, that participation was voluntary, and that it would not affect medical treatment. The content of the questionnaire was briefly explained. Patients were informed that they would be contacted several times after surgery to collect further data and that they were free to withdraw from further participation at any time. Those willing to participate received the questionnaire, which they were asked to return as soon as possible in a box available at the ward of the heart surgery hospital for this purpose (Time 1).

Further, patients were asked whether they would receive visits from persons close to them (many of the patients came from remote towns in Germany) and whether they were willing to give another questionnaire to their partner. Patients willing to involve their partners were instructed to return the partner questionnaire in a separate sealed envelope in the box at the ward as well.

Six months after surgery, patients willing to continue participation in the study were mailed a follow-up questionnaire, containing most of the scales used at Time 1 as well as additional measures of quality of life. Those patients whose partners had taken part at Time 1 were asked to give a second questionnaire to their partner at Time 2.

Participants

Participants of the present research were 122 patients scheduled for heart surgery at the Charité Hospital of Berlin, who were selected from a larger sample of 381 patients participating in a study on coping with chronic heart disease. Participants included in the study

were those patients who received visits from close relatives before surgery, who were will-
ing to involve their partners, and whose partners responded to the questionnaire. No inquir-
ies were made regarding the reasons for non-participation in the partner study. Thus, it is
unknown how many patients failed to provide partner data (a) because they did not receive
visits from close social partners before surgery, (b) because they refused or forgot to ask
their visitors, or (c) because their partners refused to take part. The mean age of the present
patient sample was 57.9 years (SD = 9.77), ranging from 30 to 76 years. There were 103 male
patients (84.4%) with a mean age of 58.57 years (SD = 9.19) and 19 female patients (15.6%)
with a mean age of 54.57 (SD = 12.10). Age differences between the sexes were not signific-
ant ($t = 1.65$, $df = 120$, $p = .10$). The majority of the patients was scheduled for bypass-
surgery ($n = 87$, 71.3%). The remaining participants received heart valve substitution
($n = 26$, 21.3%) or both treatments ($n = 5$, 4.1%), and four received other kinds of surgery
(e.g., aneurysm resection). Nearly half of the patients ($n = 59$, 48.4%) were employed at
Time 1, 45 (36.9%) were retired, and 15 (12.3%) were unemployed. The partner sample
consisted of 103 female relatives (95 spouses and 6 daughters) and 18 male relatives (13
spouses, 4 sons) with a mean age of 51.42 (SD = 12.09) who did not differ in age
($M_{females} = 51.05$, SD = 12.48, $M_{males} = 53.39$, SD = 9.78, $t = 0.75$, $df = 112$, $p = 0.45$).

The patient sample at the six-month follow-up (Time 2) included 67 patients who had
responded to the questionnaire at Time 1 and Time 2 and whose partner had joined the
study at least at Time 1. The attrition rate was 45.08%, due to the following reasons: Five
patients (4.1%) were released before surgery after filling out the questionnaire; 19 patients
(15.6%) were unwilling to continue the study at the follow-up; 18 patients (14.7%) did not
complete or return the second questionnaire despite agreement to continue participation; 5
patients (4.1%) could not be reached by mail or phone; and 8 patients were deceased. There
were 54 men (80.6%) and 13 women (19.4%) with a mean age of 57.36 (SD = 10.59) at
Time 1. Most of these patients received bypass surgery ($n = 49$, 73.1%), 14 (20.9%) under-
went heart valve substitution, and 2 (3%) received both treatments. Thus, the composition
of the follow-up sample with regard to age, gender, and surgical treatment reflects closely
the characteristics of the sample at Time 1.

Of the 67 patients taking part at Time 2, 50 patients also provided partner data at the
follow-up. There were 41 male and 9 female patients with a mean age of 58.57 (SD = 10.78).
No significant differences in the distribution of type of surgery and demographic variables
were found between the follow-up participants and nonparticipants.

Measures

Personal Resources. Personal resources were measured in both the patient and the partner
sample before surgery (T1) and again at the six-month follow-up (T2). Three question-
naires were used to assess five different dispositional resource factors. First, a German
version of the Generalized Self-Efficacy Scale developed by Schwarzer and Jerusalem
(1995) was used, assessing *generalized self-efficacy beliefs* as a global and relatively stable
personality dimension (Schwarzer, 1993). Sample items are: "I can always manage to solve
difficult problems if I try hard enough." Second, *dispositional optimism* was assessed by a
German version of the Life Orientation Test (LOT) of Scheier and Carver (1985). LOT
items focus on generalized outcome beliefs that are not necessarily a reflection of one's
personal coping abilities but a general positive outlook on life and one's future. Four items
of the LOT are positively phrased (e.g., "In uncertain times, I usually expect the best"), and
four are negatively phrased (e.g., "If something can go wrong for me, it will"). Third,

a subset of items of the Self-Regulation Competence Questionnaire (SRC; Schröder, 1997) was used. The SRC scales assess three kinds of self-management abilities, namely volitional competence, coping competence, and habitual self-control. *Volitional competence* was assessed by 16 items indicating the ability of autonomous self-regulation in decision-making and goal-striving behavior. A sample item is "Compared to other people I would call myself a particularly strong-willed person." *Coping competence* was assessed by 12 items focusing on the degree of stress resistance (versus helplessness, resignation, and mood disturbance) in the face of failure or negative life events. All items are phrased negatively, the degree to which they are rejected indicates stress resistance or coping competence. An example is "When I can't manage something easily, I soon begin to question my abilities." *Habitual self-control* was assessed by a ten-item scale measuring the ability to persist in the enactment of difficult intentions and to resist temptation. A sample item is "If something important to me turns out to be difficult, I just persist in my efforts." All personality scales were presented using the same four-point response format ranging from 1 (*not at all true*) to 4 (*exactly true*). Means, standard deviations, internal consistencies, and inter-correlations of the scales are shown in Table 1.

Since the influence of patients' and partners' global personality resources on patients' quality of life was the focus of this study, an aggregate measure was computed, using the sum of the standardized scale scores as indicators of general personal resourcefulness. The test-retest reliabilities of the generalized personal resource scores were $r_{tt} = .79$ for the patients ($n = 61$) and $r_{tt} = .79$ for their partners ($n = 49$) within the six-month interval, indicating a high stability of this aggregate.

Coping Style. At Time 1, the Trier Coping Scales by Klauer and Filipp (1993) were used to assess coping styles as indicators of patients' behavioral adaptation to their illness. The scales focus on populations suffering from severe chronic diseases, and they are widely used in German studies on coping with stress of illness. Based on previous analyses relating coping styles to criteria of adaptation and well-being (Schröder, 1997), two subscales of this instrument were chosen to represent positive and negative coping tendencies. "Seeking social integration" (9 items, $\alpha = .69$) was taken to assess prosocial and adaptive coping tendencies, and "rumination" (9 items, $\alpha = .80$) was chosen as an indicator of a maladaptive cognitive coping style. Sample items are "I have visited people or invited others to visit me" (seeking social integration) and "I have thought about better times in the past" (rumination). Responses were made on six-point Likert scales from 1 (*never*) to 6 (*very often*).

Mood States. Emotional States were measured at Time 1 and 2 using a 35-item version of the Profile of Mood States (POMS) by McNair, Lorr and Droppleman (1971) adapted to German by Bullinger, Heinisch, Ludwig and Geier (1990). The POMS is a widely used instrument with excellent psychometric properties (Bullinger *et al.*, 1990) containing an adjective checklist to assess depression, vigor, fatigue, and anger. The items were presented with five-point response scales from 1 (*not at all*) to 5 (*very much*). Only the vigor and depression scales were used in the following analyses. The seven items of the vigor scale (e.g., "lively," "active"; $\alpha_{T1} = .90$, $\alpha_{T2} = .90$) measure well-being and energetic mood, the 14 items of the depression scale (e.g., "unhappy," "hopeless"; $\alpha_{T1} = .91$, $\alpha_{T2} = .92$) assess dysphoric mood during the past week.

Social resources. Two scales were used to assess social resources of the patients at Time 1 and 2. *Social Support* was assessed with the German version of Donald and Ware's (1984)

Social Support Scale (Kirchberger, 1991; Westhoff, 1993). The scale contains 19 items assessing perceived availability of emotional, instrumental, informational, and material support, with a primary focus on emotional support. It is tailored to patient populations. Responses were made on five-point Likert scales from 1 (*never*) to five (*always*). Examples of items are: "Is there anyone . . . who takes you to your physician if necessary", ". . . who embraces you", ". . . whose advice is really important to you?" α was .94 at Time 1 and .96 at Time 2. Further, *loneliness* was assessed by ten items of the UCLA loneliness scale (Russel, Peplau, and Cutrona, 1980) selected from the German version developed by Stephen and Fäth (1989). The items with the highest corrected item-test-correlation as reported by Stephan and Fäth were chosen ($\alpha_{T1} = 0.82$, $\alpha_{T2} = .87$ in the present study). The loneliness scale aims at deficits in social integration and intimate social relationships (e.g., "There are people who are quite close to me"; "I know people I can rely on." Responses were made on four-point Likert scales ranging from 1 (*not at all true*) to 4 (*exactly true*). Items indicating social integration were reversed and a sum score for loneliness was computed.

Indicators of quality of life. Two scales served as measures of quality of life. First, *physical and psychosomatic symptoms* were assessed by 22 items, which were selected from the Munich Symptom Checklist for Hypertension Patients (Steinbüchel and Häkel, 1991) by the surgeons of the Charité hospital as most relevant in a population of heart patients. The items refer in part to typical illness-related symptoms such as "loud heart beat," "angina pain," "breathing difficulty," but also include physical and psychosomatic symptoms unrelated to heart disease (e.g., "headache," "sleeping problems," "low appetite"). Patients were asked to rate the extent of these symptoms during the past week on five-point scales ranging from *not at all* to *very strong*. Symptoms were assessed at Time 1 ($\alpha = .77$) and Time 2 ($\alpha = .81$) as indicators of health related quality of life. *Life satisfaction* was assessed by the Munich List of Quality of Life Dimensions (Heinisch, Ludwig and Bullinger, 1991) only at the six-month follow-up. This instrument comprises 17 items asking respondents to rate their satisfaction with different life domains during the past week on five-point Likert scales from *not at all satisfied* (1) to *very satisfied* (5). Factor analytical results on this scale (Schmitz, 1996) indicated three factors interpretable as "satisfaction with health and overall life," "satisfaction with social life," and "satisfaction with self". Based on these results three subscales were computed. Five items were allocated to "satisfaction with self" ($\alpha = .81$) measuring satisfaction with one's mental functioning, autonomy in everyday life, competencies, self-esteem, and one's personality in general. Four items were taken as indicators of quality of social life ($\alpha = 80$), assessing satisfaction with patients' partnership, family life, social contacts to friends, and social relationships in general. Seven items were allocated to "satisfaction with health and overall life" ($\alpha = .85$), referring to physical condition, energy, overall health, task fulfillment, leisure time activities, coping with disease, and everyday life in general. Life satisfaction was assessed at Time 2 only because many items were not applicable at Time 1 for a majority of patients who spent the week(s) before surgery in a hospital setting. Finally, a single item used at Time 2 assessed the overall evaluation of quality of life during the past week on a five point Likert scale from 1 (*miserable*) to 5 (*excellent*).

Physical state of the patients. A number of disease-related indicators of health state were derived from the medical records, including the number and degree of vessels occluded, number of bypasses performed, number of infarcts, NYHA-index for the bypass patients, and heart valve insufficiency and stenoses for the patients scheduled for heart valve substi-

tutions. Since none of these variables were associated with the outcomes, we did not use them as controls in our analyses.

RESULTS

Psychometric properties and intercorrelations between the five personality variables assessed in both the patient and the partner sample are presented in Table 1. Cross-sectional correlations in the patient sample varied between .35 and .71 at Time 1 and .37 to .75 at Time 2, thus justifying the computation of an aggregate measure indicating overall personal resourcefulness. Similar correlations were found in the partner sample, ranging from .39 to .67 at Time 1 and .47 to .75 at Time 2. Personal resource measures were fairly stable over the six-month interval, with retest-correlations between .62 and .79 in the patient sample and retest reliabilities from .54 to .75 in the partner sample. Further, no significant mean differences emerged between Time 1 and Time 2 measures of the personality factors.

Paired sample t-tests comparing means of Time 1 and Time 2 measures of dependent variables revealed a significant decline in depression ($M_{T1} = 19.67$, $SD_{T1} = 5.53$; $M_{T2} = 18.27$, $SD_{T2} = 5.65$; $df = 62$; $t = 1.84$, $p < .05$ one-sided) and symptoms ($M_{T1} = 37.78$, $SD_{T1} = 7.57$; $M_{T2} = 34.99$, $SD_{T2} = 7.38$; $df = 65$; $t = 2.87$, $p < .01$). Energetic mood, in contrast, increased during the six-month interval ($M_{T1} = 17.20$, $SD_{T1} = 5.52$; $M_{T2} = 19.13$, $SD_{T2} = 4.74$; $df = 62$; $t = -3.22$, $p < .001$, one-sided).

Correlations Between Personal Resources of the Patients and Coping Criteria

Table 2 shows the cross-sectional and time-lagged zero-order correlations between the five personality resources and the criterion variables. Correlation coefficients of the five predictors varied widely among several of the outcomes, thus pointing to the utility of an aggregate measure, which might provide more reliable and probably less error-prone estimates of the relationship between patients' personal resourcefulness and adaptation criteria.

Table 1 Psychometric properties and intercorrelations of the personality scales in the patient sample and the partner sample

	GSE	LOT	SRC-V	SRC-C	SRC-H	T1: M (SD)	T2: M (SD)	T1: α	T2: α
Patient Sample									
GSE	.73	.51	.71	.51	.65	29.98 (4.42)	29.27 (4.11)	.82	.80
LOT	.52	.62	.37	.39	.35	24.28 (3.59)	24.63 (3.37)	.67	.72
SRC-V	.66	.38	.76	.54	.76	48.60 (7.19)	48.83 (7.30)	.89	.90
SRC-C	.45	.48	.66	.79	.47	36.95 (6.16)	37.53 (6.58)	.91	.93
SRC-H	.50	.37	.75	.63	.68	30.02 (4.44)	29.67 (4.31)	.81	.78
Partner Sample									
GSE	.75	.53	.64	.40	.54	30.35 (4.26)	30.90 (4.20)	.82	.84
LOT	.65	.54	.39	.46	.37	24.96 (3.47)	25.12 (4.04)	.66	.78
SRC-V	.73	.63	.73	.58	.67	49.68 (7.39)	49.82 (6.50)	.88	.86
SRC-C	.47	.75	.59	.67	.49	36.00 (7.62)	37.17 (6.83)	.93	.92
SRC-H	.63	.54	.73	.56	.73	30.55 (4.45)	30.46 (4.27)	.76	.72

Note: Upper diagonals display correlations at Time 1; Patient sample at T1: $n > = 115$; Partner sample T1: $n > = 115$; Lower diagonals display correlations at Time 2; Patient sample at T2: $n > = 64$; Partner sample T2: $n = 50$; In diagonal: Retest-reliabilities; All correlations are highly significant ($p < .001$). GSE = General Self-Efficacy Scale; LOT = Life Orientation Test; SRC-V = Volitional Competence Scale; SRC-C = Coping Competence Scale; SRC-H = Habitual Self-Control.

Table 2 Correlations between patients' personality resources assessed at Time 1 (columns 1 to 5)/Time 2 (columns 6 to 10) and coping styles, social resources, emotional and physical states, and life satisfaction

	Optimism	Self-efficacy	Volitional competence	Coping competence	Hab. Self-control	Optimism	Self-efficacy	Volitional competence	Coping competence	Hab. Self-control
Coping Style										
Rumination T1	-.33***	-.27**	-.32***	-.48***	-.31***					
Social Coping T1	.20*	.19*	.22*	.04	.30***					
Emotional States										
Depression T1	-.41***	-.32***	-.24**	-.47***	-.40***					
Depression T2	-.17	-.03	-.14	-.25	-.14	-.31*	-.23	-.29*	-.43***	-.29*
Energy T1	.31***	.41***	.31***	.21*	.35***					
Energy T2	.39***	.43***	.39***	.37***	.37***	.46***	.51***	.42**	.39**	.35**
Social Resources										
Social Support T1	.27**	.31***	.28**	.18	.40***					
Social Support T2	.26*	.15	.14	.11	.35**	.26*	.20	.11	.13	.16
Loneliness T1	-.45***	-.45***	-.45***	-.26**	-.49***					
Loneliness T2	-.45***	-.38**	-.48***	-.17	-.53***	-.48***	-.42***	-.31*	-.19	-.17
Life Satisfaction										
Satisfaction Self T2	.44***	.40***	.42***	.59***	.37**	.56***	.55***	.60***	.79***	.61***
Satisfaction Social T2	.33***	.25*	.27*	.19	.38**	.36***	.29*	.30*	.22	.30*
Satisfaction Life T2	.37***	.15	.14	.27*	.16	.46***	.36**	.30*	.39***	.33**
Satisfaction Total T2	.47***	.32*	.31*	.41***	.35***	.56***	.48***	.46***	.53***	.48***
Quality of Life T2	.51***	.25*	.19	.24	.19	.57***	.36**	.25*	.32*	.18
Symptoms										
Symptoms T1	-.18*	-.09	-.04	-.14	-.05	-.31*	-.18	-.08	-.25*	-.16
Symptoms T2	-.22	-.19	-.01	-.16	-.14					

Note: Time 1 cross-sectional analyses: n = 114 to 118; Time-lagged correlations and Time 2 cross-sectional analyses: n = 62 to 66.

Briefly, *general self-efficacy* emerged as the best predictor of energy levels at Time 1 and Time 2. *Coping competence* was found to be most strongly (negatively) related to ruminative coping and depressive mood before as well as six months after surgery. Among the three self-regulation competence variables, *habitual self-control* assessed at Time 1 was the best predictor of social resources (social support, loneliness), but it failed to predict social resources in the cross-sectional analyses at Time 2. All three self-regulation competence variables assessed at Time 2 were only weakly related to social resources, which were better predicted by optimism and self-efficacy beliefs. In contrast, *self-regulation competencies* and, in particular, coping competence were most strongly related to self-satisfaction in both the longitudinal analyses and the cross-sectional analyses at Time 2. *Dispositional optimism* was found to be the dominant predictor of overall quality of life.

The Effects of Patients' and Partners' Overall Personal Resources on Coping Criteria

Within the following analyses, aggregate scores of the five personality measures were used as predictors. The zero-order correlations between patients' and partners' general personal resources and the outcomes are shown in the first two columns of Table 3. Patients' personal resources assessed at Times 1 and 2 were strongly related to all outcomes in the predicted direction, with the exception of physical symptoms. A significant negative correlation between patients' overall personal resources and symptoms was found only in the cross-sectional analysis at Time 2. The effects of partners' resources on patients' well-being and adaptation are in line with the hypotheses. Compared to patients' own personal resources, partners' personality was a weaker predictor of individual criteria of coping such as coping behavior, emotional states, and self-satisfaction of the patients. In contrast, the effects of partners' personal resources on social support, and satisfaction with social life and life in general were comparable to the effects of the patients' personality. The strongest effects of partners' resources were found in the longitudinal analyses and in the cross-sectional analyses at the six-month follow up.

Since patients' and partners' overall (aggregated) personal resources were significantly correlated ($r = .38$ at Time 1, $p < .001$, $r = .32$, $p < .05$), a certain overlap in the prediction of coping criteria could be expected. In order to determine the unique effects of partners' resources beyond the effects of patients' own personality resources, a series of multiple hierarchical regressions were performed. To control for the effects of age and sex, these variables were entered first, followed by patients' combined personal resources in Step 2 and partners' personal resources in Step 3. The results are shown in Columns 3 to 10 of Table 3. Three sets of analyses were performed, two cross-sectional and one longitudinal using personal resources at Time 1 to predict coping criteria at Time 2. Age and sex explained up to 8.1% of the variance in outcomes at Time 1, and up to 24.4% of the variance in outcomes at the six-month follow-up. Age was significantly related to ruminative coping at Time 1, but older age was also connected with significantly lower degrees of depression and more self-satisfaction at Time 2. Gender was significantly related to social support in all three analyses with male patients reporting more support then female patients.

In the *cross-sectional analyses at Time 1*, patients' resources explained an additional 6% to 28.5% of the variance in the outcomes after controlling for the effects of age and gender. Partners' resources did not explain additional variance in Time 1 outcomes, with the exception of a small contribution to the prediction of social support ($\Delta R^2 = 1.5\%$). In the *longitudinal analyses*, patients' resources were found to be a sufficient predictor of energy levels and self-satisfaction in combination with age and sex. Patients' resources were uniquely

Table 3 Cross-sectional analyses at Time 1: Effects of both patients' and partners' combined personality resources on coping style, social resources, emotional and physical states, and quality of life; results of hierarchical regressions controlling for age and sex

| | Bivariate correlations | | 3-Step Multiple hierarchical regressions | | | | β in the 3rd step | | | |
	Patients' resources	Partners' resources	Age/Sex R^2	Patients' R ΔR^2	Partners' R ΔR^2	Total R/R^2	Age	Sex	Patients' resources	Partners' resources
Coping T1										
Rumination	−.43***	−.24**	.072*	.172***	.003	.50/.25	.21*	.02	−.40***	−.06
Social Coping	.24**	.07	.006	.060**	.002	.26/.07	−.04	.10	.27**	−.05
Emotional States T1										
Depression	−.48***	−.29***	.047	.221***	.009	.53/.28	−.10	.10	−.44***	−.11
Energy	.39***	.13	.045	.131***	.001	.42/.18	−.16	−.05	.38***	−.04
Social Resources T1										
Support	.37***	.32***	.081*	.102***	.015*	.44/.20	−.001	−.21*	.28**	.13*
Loneliness	−.53***	−.24**	.001	.285***	.005	.54/.29	−.04	−.10	−.52***	−.08
Symptoms T1	−.12	−.00	.081*	.003	.003	.29/.09	.18	.25	−.08	.06

$n = 108$ to 115;

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; One-tailed significance levels are reported, except for age and sex.

related to loneliness ($\Delta R^2 = 5.8\%$), satisfaction with social life ($\Delta R^2 = 5.8\%$), as well as general life satisfaction ($\Delta R^2 = 4.9\%$ and $\Delta R^2 = 7.1\%$) after partialling out the effects of age, gender, and patients' own resources. Both patients' and partners' resources lost their predictive power on social support after entering age and sex in the first step of the multiple regression. Similar results emerged in the *cross-sectional analyses at Time 2*. Patients' personal resources accounted for the greatest portion of the variance in emotional states and self-satisfaction. Partners' resources were most strongly uniquely related to social resource indicators (support, loneliness) and satisfaction with social life, explaining an additional 6.6 to 12.3% of the variance in these outcomes. Partners' resources did not contribute to the prediction of depression and self-satisfaction, but explained an additional 4% in the variance of energetic mood. Further, partners' resources were found to be uniquely related to general life satisfaction, explaining an additional 3.4% to 9.7% of the variance in these outcomes.

Effects of Patients' and Partners' Personal Resources on Changes in Emotional and Psychosocial Outcomes

A series of multiple regressions were performed to examine the effects of patients' and partners' resources on *changes* in those psychosocial outcomes, which were assessed at both Time 1 and 2 (emotional states, social support, and loneliness). In each analysis, the criterion variable at Time 2 was regressed on its premeasure (assessed before surgery) in Step 1. Patients' and partners' personal resources were entered in Steps 2 and 3, respectively. Both patients' and partners' resources did not add to the prediction of depression and social support at Time 2 after the premeasures were partialled out. In contrast, changes in energy-levels and loneliness were significantly related to either patients' or partners' personal resources. Both patients' and partners' resources at Times 1 and 2 were positively related to *increases in energy* (see Table 4). Patients' resources at Time 1 explained an additional 4.5% ($p < .05$, one-sided), and patients' resources at Time 2 explained an additional 16% of the variance in Time 2 energy levels ($p < .001$). In the second analysis (using Time-2 resources of partners and patients), partners' resources accounted for additional 4.9% of the variance in energy, but partners' resources assessed at Time 1 failed to contribute to the prediction of energy at Time 2. *Changes in loneliness* were predicted by partners' personal resources only. Loneliness scores were highly stable over time ($r_{tt} = .85/.83$, see Table 4), explaining 72 and 69 percent of the variance in loneliness at the six-month follow-up. Patients' resources assessed at Times 1 and 2 failed to explain residual variance after controlling for Time-1 loneliness. Partners' resources assessed at Time 1 explained an additional 2.2% of the variance ($p < .05$), and partners' resources assessed at Time 2 accounted for an additional 8.1% of the variance in Time 2 loneliness ($p < .001$) after controlling for the effects of Time 1 loneliness and patients' resources. In sum, these results provide support for our hypotheses on the differential effects of patients' and partners' resources on changes in emotional and social outcomes. Patients' resources' were related to changes in their energy levels, and partners' resources accounted for changes in patients' loneliness scores.

One last set of regressions was performed to examine effects of partners' resources on changes in patients' resources and the other way round. Since both patients' and partners' resources were fairly stable over time, no significant effects on changes in the personal resources of both patients and partners were found. However, difference scores (subtracting Time 2 resources from Time 1 resources) of patients and partners were significantly related ($r = .37, p < .01$ one-tailed), indicating mutual developments in personal resourcefulness.

Table 4 Longitudinal analyses: effects of both patients' and partners' combined personality resources (Time 1) on coping style, social resources, emotional and physical states, and quality of life (Time 2); results of hierarchical regressions controlling for age and sex

	Bivariate correlations		3-Step Multiple hierarchical regressions				β in the 3rd step			
	Patients' resources[a]	Partners' resources[a]	Age/Sex R^2	Patients' R ΔR^2	Partners' R ΔR^2	Total R/R^2	Age	Sex	Patients' resources	Partners' resources
Emotional States T2										
Depression	−.17	−.07	.085*	.029	.004	.34/.12	−.28*	.04	−.15	−.08
Energy	.46***	.18	.119**	.140**	.001	.51/.26	−.08	−.24	.41**	−.04
Social Resources T2										
Support T2	.25*	.30**	.151*	.014	.020	.43/.18	−.02	−.33*	.06	.16
Loneliness T2	−.49***	−.44***	.048	.192***	.058*	.55/.30	−0.01	.03	−.35**	−.28*
Life Satisfaction										
Satisfaction Self	.54***	.38**	.102*	.275***	.016	.63/.39	.28*	−.03	.50***	.15
Satisfaction Social	.36**	.40***	.052	.089***	.058*	.45/.20	−.08	−.05	.20*	.28*
Satisfaction Life	.26*	.29*	.019	.074*	.026	.35/.12	.20	.11	.21	.18
Total Satisfaction	.45***	.43***	.039	.186***	.049*	.52/.27	.18	.02	.35**	.25*
Quality of Life	.32**	.28*	.036	.085*	.071*	.44/.19	.15	−.01	.19	.31*
Symptoms T2	−.16	−.08	.101	.009	.005	.34/.12	−.18	.20	−.07	−.08

n = 48 to 50; [a]n = 60 to 64;

*** p < .001; ** p < .01; * p < .05; One-tailed significance levels are reported, except for age and sex.

Table 5 Cross-sectional analyses at Time 2: effects of both patients' and partners' combined personality resources on coping style, social resources, emotional and physical states, and quality of life; results of hierarchical regressions controlling for age and sex

	Bivariate correlations		3-Step Multiple hierarchical regressions				β in the 3rd step			
	Patients' resources	Partners' resources	Age/Sex R^2	Patients' R ΔR^2	Partners' R ΔR^2	Total R/R^2	Age	Sex	Patients' resources	Partners' resources
Emotional States T2										
Depression	−.41***	−.27*	.244**	.131**	.015	.62/.39	−.34**	.21	−.33**	−.13
Energy	.53***	.35**	.090	.275***	.040*	.64/.41	−.16	−.15	.47***	.21*
Social Resources T2										
Support	.22*	.35**	.232**	.022	.066*	.57/.32	.02	−.43**	.07	.27*
Loneliness	−.40***	−.44***	.113	.189***	.082*	.62/.38	−.00	.21	−.36**	−.30*
Life Satisfaction										
Satisfaction Self	.78***	.37**	.101	.473***	.015	.77/.59	.15	−.06	.67***	.13
Satisfaction Social	.37**	.48***	.065	.169**	.123**	.60/.36	−.10	−.14	.31*	.37**
Satisfaction Life	.46*	.48***	.037	.267***	.093***	.63/.40	.15	.08	.43***	.32**
Total Satisfaction	.63***	.53***	.064	.401***	.097***	.75/.56	.10	−.02	.55***	.33**
Quality of Life	.42***	.33**	.158*	.103**	.034*	.54/.29	.14	−.25	.27*	.19
Symptoms T2	−.25*	−.14	.100	.103*	.000	.45/.20	−.14	−.18	−.34*	.02

n = 48 to 50;
*** $p < .001$; ** $p < .01$; * $p < .05$; One-tailed significance levels are reported, except for age and sex.

Table 6 Effects of patients' and partners' personal resources on changes in energy and loneliness from Time 1 to the six-month follow-up

	Resources at Time 1 (n = 58)						Resources at Time 2 (n = 45)					
	B	SE	Beta (in)	R	R^2	ΔR^2	B	SE	Beta (in)	R	R^2	ΔR^2
Changes in Energy												
Step 1: Energy Time 1	.404***	.105	.580	.58	.34		.328**		.520	.52	.27	
Step 2: Patient resources	.236	.149	.240*)	.62	.38	.045*)	.419**		.434***	.66	.43	.16***
Step 3: Partner resources	.064	.161	.048	.62	.38	.00	.269*)		.235*)	.69	.48	.049*)
Changes in Loneliness												
Step 1: Loneliness Time 1	.897***	.098	.849***	.85	.72		.861***	.095	.833***	.83	.69	
Step 2: Patient resources	a	a	a	a	a	a	.043	.107	−.049	.83	.70	.002
Step 3: Partner resources	−.199*	.093	−.160*	.86	.74	.022*	−.326***	.083	−.299***	.88	.78	.081***

* $p < .05$; ** $p < .01$; *** $p < .001$, *) one-tailed significance: $p < .05$;
a: Patients' resources removed in Step 2 because of multicollinearity.

DISCUSSION

The results of this study support the conclusion that personality resources of close social partners are uniquely related to social resources, emotional well-being, and quality of life among patients suffering from severe heart disease. The study adds to the knowledge in coping research in several respects. First, most research on coping with chronic disease relies on patients' personal and social resources as predictors of adaptation and quality of life and has neglected the impact of partners' personality. In previous research, personality resources of close partners have been used as predictors of their own stress responses only, as evidenced in the literature on coping with caregiver's burden (e.g., Hooker *et al.*, 1998). Thus, this study adds to our knowledge of whether and how partner's resources display additional effects on patients' well-being and quality of life. Partner's personality resources added most strongly to the patient's social resources, as well as to social aspects of quality of life. Further, there is evidence that partners' personal resources affected changes in patients' perceived energy levels over time, leading to a higher increase in vigor over a six-month period following surgery among patients with resourceful partners.

Second, complementing the usual single-trait approach, a set of diverse personal resource variables was used. Well-known expectancy-based resource factors (general self-efficacy and dispositional optimism) were combined with measures of general self-regulation competencies of the participants. Treated individually, each of the patients' personal resources were strongly related to their psychological and social well-being, with effect sizes comparable to those reported in earlier studies (e.g., Carver *et al.*, 1992; Scheier and Carver, 1987, 1992). The resource factors show moderate to strong intercorrelations, justifying their aggregation into an indicator of general personal resourcefulness. However, the average overlap of the different trait factors was only moderate, suggesting that one randomly chosen variable would not suffice to represent the general resourceful personality. Further, the traits showed considerable differences in their predictive power. In sum, these results support a multi-trait approach to analyzing partners' overall personal resources on patients' well-being and quality of life. The multi-trait approach has two methodological advantages. First, using a single resource factor might lead to biased results as it represents only a part of the personal resources that might play a role in coping with a chronic disease. Second, using multiple indicators for personal resources can be expected to outweigh measurement errors affecting the correlations with the outcomes, thus leading to more reliable results. Using the multi-trait approach we found strong support for the differential effects of patients' and partners' resources on diverse criteria of coping and adaptation. Patients' personal resources were dominant predictors of genuine psychological states such as depression, rumination and self-satisfaction, and they were less strongly related to psychosocial outcomes. Partners' resources, in contrast, accounted primarily for social outcomes such as social support and social integration. This makes sense, since close social partners can be expected to be the main source of support, social integration, and quality of social relationships.

Finally, the study used a set of three newly developed, volition-based trait variables as a complement to the widely-used expectancy-based predictors of coping. One might argue that the high number of studies on the effects of generalized expectancy factors such as self-efficacy beliefs, locus of control, and optimism, should provide sufficient evidence of the importance of personality in coping with chronic disease. However, the results of this study contradict this conclusion, as there is evidence that volition-based self-regulation competencies might add to the prediction of some of the outcomes. *Coping competence*,

for example, was dominant in the prediction of depression and a passive-ruminative coping style, as could be expected based on the conception of coping competence as a stress buffer. This result also suggests that positive expectancies (as represented in optimism and self-efficacy beliefs) offer an incomplete explanation for these outcomes. Features of coping competence deficits such as a negative attribution style, an inclination towards learned helplessness, and low frustration tolerance offer an additional or superior explanation. Further, *habitual self-control* at Time 1 was most strongly related to patients' social coping style and their social resources, but habitual self-control measured at Time 2 was not related to social outcomes. The meaning of this pattern is not quite clear, but it suggests that different personal resources might have a different impact on psychosocial outcomes depending on the particular stage of an illness. Patients' self-control shown in a crisis situation might be of particular importance for their current and future social relationships with their partners, promoting and preserving positive reciprocal interactions. Patients' self-control might reduce stress and perceived demands of close social partners and strengthen future supportive relationships. Patients high in self-control might be more satisfied with the social support they receive in a crisis-situation. Communication of this satisfaction, in turn, might be perceived as highly rewarding by close social partners, encouraging future social interactions with the patient. This interpretation fits nicely with previous results supporting the view that people high in personal resources are more likely to elicit social support, thus adding to their overall resourcefulness (Hobfoll *et al.*, 1990). Self-control might be one of the most important personal resources in preserving and strengthening supportive social relationships in a crisis situation. In sum, the results suggest that an exclusive focus on expectancy-based resource factors might offer an incomplete picture of the effects of overall personality resources on well-being and adaptation. They also suggest that a systematic inclusion and comparison of different personality factors in the coping process might produce valuable insights into the specific dispositions and competencies that are most effective in specific stages of a disease with specific coping demands.

Several limitations of the present study have to be addressed. First, the generalization of the results is limited by the fact that only a part of the patients' close social partners were approached and/or willing to enter and continue their participation in this study. The sample size was considerably reduced at Time 2 due to the fact that both patients' and partners' continued participation was required, and the involvement of the partners was left to the patients' own decision and efforts. Also, the partner sample was not homogeneous in that the patients involved not only spouses but also grown-up children as their most significant others. Further research is needed to clarify the impact of partners' personality on patients' well-being and quality of life, including different patient samples, significant others, illnesses, and stages of disease.

Further, the present study does not provide sufficient information to clarify the meaning of the relationship between partners' resources and patients' outcomes. Previous research suggested that spouses' personal resources buffer against their feelings of helplessness, stress, burnout and depression, and reduce caregiver stress (Bookwala and Schulz, 1998; Clark and Hartman, 1996; Hooker *et al.*, 1992, 1998; Markiewicz *et al.*, 1997; Pagel *et al.*, 1987; Park and Folkman, 1997; Welleford *et al.*, 1995). Further, there is evidence that coping patterns of the spouse and the quality of the patient-spouse interaction play crucial roles in patients' psychological adaptation. Spouses' ability to engage in empathic and relationship-focused coping was found to display beneficial effects on patients' well-being (Coyne and Fiske, 1992; Coyne and Smith, 1991; DeLongis and O'Brian, 1990). Criticism and negative social interactions, on the other hand, can aggravate the task of coping with

a disease for both patient and partner, adding social distress instead of buffering against illness-related stress (Coyne and Fiske, 1992; Rook, 1984, 1990). These results point to the impact of partners' adaptive coping on patients' well-being and adjustment. Partners' personalities can be expected to affect their ability to adjust to the demands of the caregivers' role, to provide emotional support, or to keep positive social interactions with the patient. Further research should address the question of how both patients' and partners' personal resources affect their mutual coping and interaction patterns, and how these processes, in turn, affect personal and perceived social resources of both patient and partner and add to their adaptation, emotional well-being, and overall quality of life. In addressing these questions, both the investigation of the specific role of single personal resource factors as well as an integrative approach might be useful and necessary.

Acknowledgements

References

Antonovsky, A. (1990) Personality and health: Testing the sense of coherence model. In: H.S. Friedman (Ed.), *Personality and disease* (pp. 155–177). New York: John Wiley and Sons.

Antonucci, T.C. and Jackson, J.S. (1987) Social support, interpersonal efficacy, and health: A life course perspective. In: L.L. Carstensen and B.A. Edelstein (Eds.), *Handbook of Clinical Gerontology* (pp. 291–311). New York: Pergamon.

Aymanns, P., Filipp, S.-H. and Klauer, T. (1995) Family support and coping with cancer: Some determinants and adaptive correlates. *British Journal of Social Psychology*, **34**, 107–124.

Bookwala, J. and Schulz, R. (1998) The role of neuroticism and mastery in spouse caregivers' assessment of and response to a contextual stressor. *Journals of Gerontology Series B – Psychological Sciences and Social Sciences*, **53 B**, 155–164.

Bullinger, M., Heinisch, M., Ludwig, M. and Geier, S. (1990) Skalen zur Erfassung des Wohlbefindens: Psychometrische Analysen zum "Profile of Mood States" (POMS) und zum "Psychological General Wellbeing Index" (PGWI). *Zeitschrift für Differentielle und Diagnostische Psychologie*, **11**(1), 53–61.

Carver, C.S., Pozo, C., Harris, S.D., Noriega, V., Scheier, M.F., Robinson, D.S., Ketcham, A.S., Moffat, F.L. and Clark, K.C. (1993) How coping mediates the effect of optimism on distress: A study of women with early stage breast cancer. *Journal of Personality and Social Psychology*, **65**, 375–390.

Clark, L.A. and Watson, D. (1991) General affective dispositions in physical and psychological health. In: C.R. Snyder and D.R. Forsyth (Eds.), *Handbook of social and clinical psychology: The health perspective* (pp. 221–245). New York: Pergamon Press.

Clark, L.M. and Hartman, M. (1996) Effects of hardiness and appraisal on the psychological distress and physical health of caregivers to elderly relatives. *Research on Aging*, **18**, 379–401.

Coyne, J.C. and DeLongis, A. (1986) Going beyond social support: The role of social relationships in adaptation. *Journal of Consulting and Clinical Psychology*, **54**, 454–460.

Coyne, J.C. and Fiske, V. (1992) Couples coping with chronic and catastrophic illness. In: T.J. Akamatsu, M.A.P. Stephens, S.E. Hobfoll and J.H. Crowther (Eds.), *Family Health Psychology* (pp. 129–149). Ohio: Hemisphere Publishing Corporation.

Coyne, J.C. and Smith, D.A.F. (1991) Couples coping with a myocardial infarction: A contextual perspective on wives' distress. *Journal of Personality and Social Psychology*, **61**, 404–412.

Cunningham, A.J., Lockwood, G.A. and Cunningham, J.A. (1991) A relationship between perceived self-efficacy and quality of life in cancer patients. *Patient Education and Counseling*, **17**, 71–78.

Deci, E.L. and Ryan, R.M. (1991) A motivational approach to self: Integration in personality. In: *Nebraska Symposium on Motivation* (Vol. 38, pp. 237–288). Lincoln: University of Nebraska Press.

DeLongis, A. and O'Brien, T. (1990) An interactional framework for stress and coping: An application to the families of Alzheimer's patients. In: M.A. Parris Stephens, J.H. Crowther, S.E. Hobfoll and D.L. Tennenbaum (Eds.), *Stress and coping in later-life families* (pp. 221–239). New York: Hemisphere.

Desharnais, R., Godin, G., Jobin, J., Valois, P. *et al.* (1990) Optimism and health-relevant cognitions after a myocardial infarction. *Psychological Reports*, 1131–1135.

Donald, C.A. and Ware, J.E. (1984) The measurement of social support. *Research in Community and Mental Health*, **4**, 325–370.

Eysenck, H.J. (1981) *A model for personality*. Berlin: Springer.

Fitzgerald, T.E., Tennen, H., Affleck, G. and Pransky, G.S. (1993) The relative importance of dispositional optimism and control appraisals in quality of life after coronary artery bypass surgery. *Journal of Behavioral Medicine*, **16**(1), 25–43.

Friedman, L.C., Nelson, D.V., Baer, P.E., Lane, M., Smith, F.E. and Dworkin, R.J. (1992) The relationship of dispositional optimism, daily life stress, and domestic environment to coping methods used by cancer patients. *Journal of Behavioral Medicine*, **15**(2), 127–141.

Grossarth-Maticek, R. and Eysenck, H.J. (1996) Psychological factors in the treatment of cancer and coronary heart disease. In: European Center for Peace and Development, Institute for Preventative Medicine (Eds.), *The Hatherleigh guide to issues in modern therapy* (Vol. 14, pp. 53–68). New York, NY: Hatherleigh Press.

Heinisch, M., Ludwig, M. and Bullinger, M. (1991) Psychometrische Testung der "Münchner Lebensqualitäts Dimensionen Liste (MLDL)" [Psychometric testing of the Munich Quality of Life Dimension Questionnaire]. In: M. Bullinger, M. Ludwig and N. von Steinbüchel (Eds.), *Lebensqualität bei kardiovaskulären Erkrankungen* (pp. 73–90). Göttingen, Germany: Hogrefe.

Hobfoll, S.E., Freedy, J., Lane, C. and Geller, P. (1990) Conservation of social resources: Social support resource theory. *Journal of Social and Personal Relationships*, **7**, 465–478.

Hobfoll, S.E. and Walfisch, S. (1984) Coping with a threat to life: A longitudinal study of self-concept, social support, and psychological distress. *American Journal of Community Psychology*, **12**, 87–100.

Hooker, K., Monahan, D.J., Bowman, S.R., Frazier, L.D. and Shifren, K. (1998) Personality counts for a lot: Predictors of mental and physical health of spouse caregivers in two disease groups. *Journals of Gerontology, Series B-Psychological Sciences and Social Sciences*, **53B**, 73–85.

Kirchberger, J. (1991) *Lebensqualität von Brustkrebspatientinnen im Verlauf der stationären Rehabilitation. Diplomarbeit* [Quality of Life of breast cancer patients during stationary rehabilitation. Unpublished master's thesis]. München, Germany: Ludwig-Maximilians Universität.

Klauer, T. and Filipp, S.H. (1993) *Trierer Skalen zur Krankheitsbewältigung* [Trier Coping Scales]. Göttingen, Germany: Hogrefe.

Kobasa, S.C. (1979) Stressful life events, personality, and health: An inquiry into hardiness. *Journal of Personality and Social Psychology*, **37**(1), 1–12.

Kobasa, S.C. (1990) Stress-resistant personality. In: R.E. Ornstein and C. Swencionis (Eds.), *The healing brain: A scientific reader* (pp. 219–230). New York, NY: Guilford Press.

Kuhl, J. (1992) A theory of self-regulation: Action versus state orientation, self-discrimination, and some applications. *Applied Psychology: An International Review*, **41**(2), 97–129.

Kuhl, J. (1994) A theory of action versus state orientations. In: J. Kuhl and J. Beckmann (Eds.) *Volition and personality. Action versus state orientation* (pp. 9–46). Seattle: Hogrefe and Huber Publishers.

Kulik, J.A. and Mahler, H.I.M. (1993) Emotional support as a moderator of adjustment and compliance after coronary bypass surgery: A longitudinal study. *Journal of Behavioral Medicine*, **16**, 45–63.

Lazarus, R.S. and Folkman, S. (1984) *Stress, appraisal, and coping*. New York: Springer.

Lazarus, R.S. and Folkman, S. (1987) Transactional theory and research on emotions and coping. *European Journal of Personality*, **1**, 141–170.

Lefcourt, H.M. and Davidson-Katz, K. (1991) Locus of Control and health. In: C.R. Snyder and D.R. Forsyth (Eds.), *Handbook of social and clinical psychology: The health perspective* (pp. 246–266). New York: Pergamon Press.

Manne, S.L. and Zautra, A.J. (1989) Spouse criticism and support: Their association with coping and psychological adjustment among women with rheumatoid arthritis. *Journal of Personality and Social Psychology*, **56**, 608–617.

Markiewicz, D., Reis, M. and Gold, D.P. (1997) An exploration of attachment styles and personality traits in caregiving for dementia patients. *International Journal of Aging and Human Development*, **45**, 111–132.

McNair, D.M., Lorr, M. and Droppleman, L.F. (1971) *EITS manual for the Profile of Mood States*. San Diego, California: Educational and Industrial Testing Service.

Pagel, M.D., Erdly, W.W. and Becker, J. (1987) Social networks: We get by with (and in spite of) a little help from our friends. *Journal of Personality and Social Psychology*, **53**, 793–804.

Park, C. and Folkman, S. (1997) Stability and change in psychosocial resources during caregiving and bereavement in partners of men with AIDS. *Journal of Personality*, **65**, 421–447.

Peterson, C. and Seligman, M.E.P. (1987) Explanatory style and illness. *Journal of Personality*, **55**, 237–265.

Rook, K.S. (1984) The negative side of social interaction: impact on psychological well-being. *Journal of Personality and Social Psychology*, **46**, 1097–1108.

Rook, K.S. (1990) Stressful aspects of older adults' social relationships: Current theory and research. In: M.A. Parris Stephens, J.H. Crowther, S.E. Hobfoll and D.L. Tennenbaum (Eds.), *Stress and coping in later-life families* (pp. 173–192). New York: Hemisphere.

Russel, D., Peplau, L.A. and Cutrona, C. (1980) The revised UCLA Loneliness Scale: Concurrent and discriminant validity evidence. *Journal of Personality and Social Psychology*, **39**, 472–480.

Scheier, M.F. and Carver, C.S. (1985) Optimism, coping and health: Assessment and implications of generalized outcome expectancies. *Health Psychology*, **4**, 219–247.

Scheier, M.F. and Carver, C.S. (1987) Dispositional optimism and physical well-being: The influence of generalized outcome expectancies on health. *Journal of Personality*, **55**(2), 169–210.

Scheier, M.F. and Carver, C.S. (1992) Effects of optimism on psychological and physical well-being: Theoretical overview and empirical update. *Cognitive Therapy and Research*, **16**, 201–228.

Scheier, M.F., Matthews, K.A., Owens, J., Magovern, G.J. Sr., Lefebre, R.C., Abbott, R.A. and Carver, C.S. (1989) Dispositional optimism and recovery from coronary artery bypass surgery: The beneficial effects on physical and psychological well-being. *Journal of Personality and Social Psychology*, **57**, 1024–1040.

Schmitz, G. (1996) Cardiac patients and their spouses: Towards a perspective of dyadic coping. In: R. Schwarzer (Ed.), *Advances in health psychology research* [CD-ROM]. Berlin: Freie Universität.

Schröder, K.E.E. (1997) *Self-regulation competence in coping with chronic disease*. Berlin: Waxmann.

Schröder, K.E.E., Schwarzer, R. and Konertz, W. (1998) Coping as a mediator in recovery from cardiac surgery. *Psychology and Health*, **13**, 83–97.

Schwarzer, R. (1993) *Measurement of perceived self-efficacy: Psychometric scales for cross-cultural research*. Berlin: Freie Universität Berlin, Institut für Psychologie.

Schwarzer, R. and Jerusalem, M. (1995) Optimistic self-beliefs as a resource factor in coping with stress. In: S.E. Hobfoll and M.W. deVries (Eds.), *Extreme stress and communities: Impact and intervention* (pp. 159–177). Dordrecht, Netherlands: Kluwer Academic Publishers.

Schwarzer, R. and Schröder, K. (1997) Effects of self-efficacy and social support on postsurgical recovery of heart patients. *Irish Journal of Psychology*, **18**, 88–103.

Stanton, A.L. and Snider, P.R. (1993) Coping with a breast cancer diagnosis: A prospective study. *Health Psychology*, **12**, 16–23.

Steinbüchel, N. and Häkel, R.J. (1991) Entwicklung eines Fragebogens zur Erfassung des physischen Befindens bei Hypertonikern [Development of a questionnaire assessing physical well-being among patients suffering from hypertension]. In: M. Bullinger, M. Ludwig and N. von Steinbüchel (Eds.), *Lebensqualität bei kardiovaskulären Erkrankungen* (pp. 110–125). Göttingen: Hogrefe.

Stephan, E. and Fäth, M. (1989) Zur Validität der deutschen Fassung der UCLA-Einsamkeitsskala [Validity of the German version of the UCLA loneliness scale]. *Diagnostica*, **35**, 153–166.

Taylor, S.E. and Armor, D.A. (1996) Positive illusions and coping with adversity. *Journal of Personality*, **64**, 873–898.

Taylor, S.E., Lichtman, R.R. and Wood, J.V. (1984) Attributions, beliefs about control, and adjustment to breast cancer. *Journal of Personality and Social Psychology*, **46**, 489–502.

Terry, D.J. (1992) Stress, coping and coping resources as correlates of adaptation in myocardial infarction patients. *British Journal of Clinical Psychology*, **31**, 215–225.

Thoits, P.A. (1986) Social support as coping assistance. *Journal of Consulting and Clinical Psychology*, **54**, 416–423.

Thompson, S.C., Sobolew-Shubin, A., Galbraith, M.E., Schwankowski, L. and Cruzen, D. (1993) Maintaining perceptions of control: Finding perceived control in low-control circumstances. *Journal of Personality and Social Psychology*, **64**, 293–304.

Welleford, E.A., Harkins, S.W. and Taylor, J.R. (1995) Personality change in dementia of the Alzheimer's type: Relations to caregiver personality and burden. *Experimental Aging Research*, **21**, 295–314.

Westhoff. (1993) *Handbuch psychosozialer Meßinstrumente* [Handbook of psychosocial measurement scales]. Göttingen: Hogrefe.