

Adult Attachment and Psychological Well-Being in Cancer Caregivers: The Mediational Role of Spouses' Motives for Caregiving

Youngmee Kim
American Cancer Society

Charles S. Carver
University of Miami

Edward L. Deci
University of Rochester

Tim Kasser
Knox College

Objective: Caring for a spouse with cancer can be challenging on many levels. How caregivers adjust to this challenge may be influenced both by their personal orientation to the relationship and by their motives for providing care. In this study we examined the prediction of caregiver well-being from the relationship qualities specified by attachment theory and from motives specified by self-determination theory. **Design:** Cross-sectional data reported here are from the American Cancer Society's Quality of Life Survey for Caregivers. **Main Outcome Measures:** Three measures were included as indicators of the caregiver's psychological adjustment: benefit finding in cancer caregiving experience, life satisfaction, and depressive symptoms. **Results:** In structural equation models, among both husband ($n = 154$) and wife ($n = 160$) caregivers, attachment security (assessed with respect to the spouse) related positively to autonomous motives for and finding benefit in caregiving; attachment anxiety related to introjected motives for caregiving and more depression. Among husbands (but not wives), autonomous motives also related to less depression, and introjected motives related to less life satisfaction and more depression. Among wives (but not husbands), autonomous motives related to greater benefit finding. **Conclusion:** Variations in attachment orientations and in reasons for providing care are important elements in understanding the psychological well-being of cancer caregivers.

Keywords: adult attachment, caregiving motives, benefit finding, life satisfaction, depression, self-determination theory

Despite medical advances, cancer is a major stress in the family, partly because cancer is perceived to have a high mortality rate (Hull, 1992) and partly because providing care to a family member with cancer involves a variety of tasks required to meet the patient's many needs (Given, Given, & Kozachik, 2001). Family members of cancer patients commonly report dysphoria (Given et al., 2001) and sometimes clinical depression (Kim, Duberstein, Sörensen, & Larson, 2005). Not all impact is adverse, however: Family caregivers sometimes report positive changes, such as finding more meaning and satisfaction in life than before the cancer diagnosis (Haley, LaMonde, Han, Burton, & Schonwetter, 2003; McCausland & Pakenham, 2003).

The extent to which family members experience depressive symptoms, dissatisfaction with life, or positive changes after engaging in cancer care may depend on a variety of social and personality variables, such as the caregiver's orientation to his or her relationship with the patient. Family caregivers, particularly spouses, often assume the cancer caregiver role with little advance notice and little opportunity to decline this role. In this situation, the quality of the caregiver's existing relationship with the care recipient may strongly influence the degree to which caregivers voluntarily engage in and fully endorse the caregiving role. Such dynamics may also affect the extent to which the caregivers adjust psychologically to the spouse's cancer.

Adult Attachment and Psychological Adjustment

Orientations to close relationships are often conceptualized via adult attachment theory (Hazan & Shaver, 1987; Mikulincer & Shaver, 2003). According to this theory, humans have an attachment system, activated by stress or threat, which operates to maintain a sense of security. Three prototypes of adult attachment exist: secure, anxious-ambivalent, and avoidant (Hazan & Shaver, 1987). These variations in attachment pattern are believed to arise because attachment figures vary in how responsive they are in times of need.

As infants grow into adults, they commonly develop variations in their attachment tendencies, such that greater or lesser amounts

Youngmee Kim, Behavioral Research Center, American Cancer Society; Charles S. Carver, Department of Psychology, University of Miami; Edward L. Deci, Department of Psychology, University of Rochester; Tim Kasser, Department of Psychology, Knox College.

This study was funded by the American Cancer Society National Home Office, intramural research. The first author dedicates this research to the memory of Heekyoung Kim. We thank Rachel Spillers for data collection and management; Corinne Crammer for editorial assistance; and all the families who participated in this project.

Correspondence concerning this article should be addressed to Youngmee Kim, Behavioral Research Center, American Cancer Society, 250 Williams St., NW, Atlanta, GA 30303-1002. E-mail: youngmee.kim@cancer.org

of these three prototypic qualities are manifested in a given relationship (Baldwin, Keelan, Fehr, Enns, & Koh-Rangarajoo, 1996; LaGuardia, Ryan, Couchman, & Deci, 2000). Thus, one can assess attachment in specific relationships as well as the person's overall attachment style as a "central tendency" (Pierce & Lydon, 2001).

Individual differences in attachment have been related to psychological adjustment to general stress (Kobak & Sceery, 1988; Mikulincer & Shaver, 2003) and to certain kinds of caregiving stress (Crispi, Schiaffino, & Berman, 1997). For example, attachment security, which is reflected in a sense of closeness and easy reliance on others, has been related to greater marital satisfaction (J. A. Feeney, 1996) and lower depression (Ciechanowski, Sullivan, Jensen, Romano, & Summers, 2003). Attachment anxiety, which reflects a desire for intimacy plus insecurity about others' responses (yielding a preoccupation with attachment, jealousy, and fear of rejection), has been related to higher marital dissatisfaction (Marchand, 2004) and depression (Besser & Priel, 2005; Carnelley, Pietromonaco, & Jaffe, 1996; Hankin, Kassel, & Abela, 2005; Shaver, Schachner, & Mikulincer, 2005; Wei, Shaffer, Young, & Zakalik, 2005). Attachment avoidance, defined by independence, distance from others, and discomfort with closeness, has also been related to higher relationship dissatisfaction (Shaver et al., 2005) and depression (Besser & Priel, 2005; J. A. Feeney, 1996; Hankin et al., 2005; Wei et al., 2005), although such relations often depend on exposure to highly stressful circumstances (Shaver et al., 2005).

Potential Associations of Adult Attachment With Motives for Caregiving

Attachment security forms a foundation for caregiving because a sense of security (comfort with closeness and interdependence) allows individuals to attend more responsively to their partner's needs (Bowlby, 1982). In other words, in adult romantic relationships, caregiving is another form of attachment behavior (Carnelley et al., 1996; B. C. Feeney & Collins, 2001; Fraley & Shaver, 1998; Kunce & Shaver, 1994). The fact that there are different patterns of attachment suggests that there may be related differences in motivation for caregiving.

A potentially useful way to think about these motivations for caregiving derives from self-determination theory (SDT; Deci & Ryan, 1985; Ryan & Deci, 2002). According to this theory, there are diverse reasons one might give for engaging in any particular behavior, and these reasons can be ordered along a continuum ranging from controlled to autonomous (Ryan & Connell, 1989). The most controlled motive for acting is an *external motive*, in which a behavior is engaged in because of external forces such as rewards or punishments. For example, someone might provide care to avoid disapproval from his or her social group. When the motive has begun to be internalized but regulation of the behavior is dependent on implicit self-approval for compliance and self-derogation for noncompliance, the motive is *introjected*. This is the second most controlled motive for acting. For example, caregiving due to introjected values would reflect acting to feel like a worthy person or to avoid guilt or shame.

The next step on the continuum of autonomy is an *identified motive*. In this case, a member of a group or society fully accepts, and thus volitionally engages in, behaviors that are valued by that

collective. With respect to caregiving, this would mean that the value of caring for an ill spouse is held by one's community and one personally believes the value is worthy in its own right. In the next most autonomous form of motivation, the person integrates this societal value with other aspects of the self. This *integrated motive* involves loving and respecting the care recipient as well as acknowledging that caregiving provides meaning and purpose in life.

According to SDT, the less autonomous the motive, the more people should experience disruptions to their well-being. Such relations have been found in a variety of settings, including education, close relationships, political attitudes, religious behavior, health care, and engaging in duties such as voting and paying taxes (see Deci & Ryan, 2002, for review).

How might these various sorts of motives relate to various qualities of adult attachment? We reasoned that the comfort in being close to others that is enjoyed by securely attached people should motivate them to autonomously help their partners (B. C. Feeney & Collins, 2001; Mikulincer & Shaver, 2003). In contrast, anxiously attached persons' hypervigilant focus on threats, feelings of conditional acceptance, and unsatisfied attachment needs may lead to more controlled motives for caregiving (Mikulincer et al., 2001). For such individuals, caregiving may be an escape from guilt. Finally, the distance entailed in avoidant attachment may deactivate compassionate responses to the partner's needs (Fraley & Shaver, 1998; Shaver & Mikulincer, 2002; Westmaas & Silver, 2001). This might lead avoidant persons to report lower motives of all types for caregiving, rather than specifically undermining autonomous motivations for caregiving.

Another issue to be considered is that caregiving may be constrained by gender role expectations (Brody, 1990). In many cultures, women are expected to be the family caregivers. Therefore, providing care may simply reflect doing what women are "supposed" to do. With this expectation and socialization process, women, relative to men, evaluate interpersonal relationships as a more important value that relates significantly to their psychological adjustment (Martire, Stephens, & Townsend, 2000). In other words, female caregivers' adjustment is more likely to be influenced by relationship quality or attachment styles as well as the extent to which they internalize the value of providing care to their ill spouses than male caregivers'. In addition, this high expectation may result in more burden and lower self-esteem from caregiving for female caregivers than male caregivers (Collins & Jones, 1997; Rose-Rego, Strauss, & Smyth, 1998). Thus, gender may also influence the dynamics of attachment and caregiving motivation. Accordingly, we examined whether our findings concerning the relations of attachment, motives for caregiving, and caregiver adjustment generalized across gender.

Hypotheses and Exploratory Research Question

We examined how attachment qualities relate to caregiving motivations in a sample of adult spousal caregivers of cancer survivors. We assessed the attachment of the caregivers with respect to the spouse. We also assessed caregiving motives along the controlled-to-autonomous continuum. We hypothesized that attachment security would relate to autonomous caregiving motives and that attachment anxiety would relate to controlled caregiving motives. We made no prediction about attachment avoid-

ance, however; avoidance might relate either to more controlled reasons for caregiving or to lower overall levels of caregiving motives.

We also predicted that different motives for caregiving, in turn, would relate to differences in psychological adjustment. We expected controlled motives to relate to poorer adjustment and autonomous motives to relate to better adjustment. Finally, we explored gender differences in relations among attachment, caregiving motives, and adjustment.

We examined three adjustment outcomes, reflecting three aspects of psychological well-being: (a) mood disturbance (using a measure of depressive symptoms), (b) overall satisfaction with life, and (c) the extent to which caregivers felt they had experienced benefits from dealing with the adversity of their spouse's cancer (Kim, Schulz, & Carver, 2007). Given the evidence that negative and positive outcomes may vary somewhat independently and may have different determinants (e.g., Zautra, 2003), we treated each of these outcomes separately.

Method

Participants

Data reported here are from the second cohort of baseline data collection from the American Cancer Society's Quality of Life Survey for Caregivers, which assesses the impact of cancer on the quality of life of family members and close friends who care for cancer survivors. Participants were nominated by cancer survivors who completed the survey for the Study of Cancer Survivors (Smith et al., 2007). Survivorship was defined in that study by prior diagnosis and treatment for cancer, without regard to present status of continued treatment or remission. The survivors were asked to nominate individuals in a family-like relationship who consistently provided help to them. Eligibility criteria for the caregiver study were being 18 years or older, being able to speak/read English or Spanish, and residing in the United States.

A total of 896 close family members completed the survey (67.9% response rate), 586 of whom were spouses of the survivors. Of spousal caregivers, 321 provided complete data for the variables under study.¹ Those with incomplete data did not differ from those with complete information ($ps > .15$), except that spouses with missing data reported more introjected motives for caregiving, $t(569) = 5.01$, $p < .001$. Caregivers were primarily White (90.8%), middle aged ($M = 56.50$, $SD = 10.62$), educated (80.6% had greater than college education), and affluent (71.1% had household income greater than \$40,000). The survivors had various types of cancer, including breast (25%), prostate (24%), colorectal (11%), non-Hodgkin's lymphoma (11%), lung (9%), and other (< 5% each of bladder, kidney, ovarian, skin, and uterine). The cancer also varied in whether it was localized (55.8%), regional (26.1%), or distant (13.9%). At the time the caregivers participated, the survivors' cancer had been diagnosed an average of 2.2 years ($SD = 0.6$ year). Approximately half of the caregivers (51%) reported providing care to the survivor at the time of survey completion. When the caregivers provided care, the majority of them provided emotional (91.9%) or tangible supports (91.8%), whereas approximately half of them provided medical (58.1%) and instrumental supports (41.1%). Approximately one third of the caregivers reported that they found providing these various types

of care difficult and approximately half of the caregivers reported that they provided care to the survivor for more than 8 hr a day.

Procedure

A packet containing an introductory letter, survey, self-addressed stamped envelope, frequently asked-questions brochure, and a 60-min phone card as an expression of appreciation for participating was mailed to the nominated caregiver. Returning the completed survey served as verifying informed consent. Telephone follow-up calls were made 3 weeks after the mailing if the caregivers had not returned the survey. A second packet, which included the same materials except for the phone card, was mailed 5 weeks after the initial mailing. If the caregivers did not return the survey, a second follow-up call was made 8 weeks after the initial mailing. This study was conducted in compliance with Emory University's Institutional Review Board.

Measures

Adult attachment. The qualities of attachment that caregivers felt with respect to their spouse were measured dimensionally, using a modified version of the Measure of Attachment Qualities (MAQ; Carver, 1997), which has been validated with cancer caregivers (Kim & Carver, 2007). MAQ items are statements, answered for extent of agreement on a 5-point scale ranging from 1 (*not at all*) to 5 (*extremely*). The MAQ as used here had three subscales, one reflecting security (e.g., "It feels relaxing and good to be close to him/her"), one reflecting anxiety (e.g., "I often worry that he or she doesn't really love me"), and one reflecting avoidance (e.g., "I prefer not to be too close to him/her"). Each of the three scales had adequate internal consistency: security (4 items, $\alpha = .83$); anxiety (6 items, $\alpha = .83$); and avoidance (3 items, $\alpha = .67$). Each scale was scored by averaging responses (after appropriate reversals). Security was inversely and fairly substantially related to avoidance, $r = -.56$; correlations of anxiety with security and avoidance were $-.36$ and $.30$, respectively (all $ps < .01$). Instructions focused respondents specifically on the nature of their relationship to their spouse.

Caregiving motives. Motives for providing care for the individual with cancer were measured using a brief scale developed for this study, Reasons for Providing Care (RPC). We wrote items intended to reflect four types of caregiving motives: Two items assessed integrated reasons for caregiving (e.g., "because it was both important and meaningful to me to do so"); two items assessed identified reasons (e.g., "because it was something I deeply valued doing"); two items assessed introjected reasons (e.g., "because I would feel guilty or ashamed of myself if I did not provide care for him/her"); and two items assessed external reasons (e.g., "because my family and friends expected me to do so"). Responses used a 7-point scale for extent of agreement ranging from 1 (*not at all*) to 7 (*very much*).

We examined the structure of the RPC by exploratory factor analysis. The number of factors retained was driven partly by

¹ Owing to an administrative error, the full Reasons for Providing Care scale was not sent to the first 311 of the 896 returned surveys; of the 586 spousal caregivers, 382 had all RPC items; 61 other spousal caregivers had incomplete data in other study variables, leaving 321.

theoretical considerations and partly by a parallel analysis (which is preferred to the scree test; Reise, Waller, & Comrey, 2000). Parallel analysis compares eigenvalues derived from factoring a random set of data with the same number of items and participants against eigenvalues for the actual data. Plots of the two sets of eigenvalues in descending order guide the point in which the eigenvalues from the actual data drop below the line defined by the average eigenvalues from the random data (Russell, 2002). The criteria we used suggested that three factors should be retained, which explained 74.1% of the overall variance.

These three factors had a clear pattern and were easily interpreted: Each item's primary loading was at least .59 greater than the same item's loadings on other factors. The first factor blended the two integrated-motive items and the two identified-motive items. This factor thus was labeled Autonomous Motives. The second factor included only the two introjection items; thus, it was labeled Introjected Motives. The third factor included only the two external items; thus, it was labeled External Motives. Scores for each scale were created by averaging the relevant items; these scores were used in the subsequent analyses. Each composite score had acceptable internal consistency (autonomous, $\alpha = .88$; introjected, $\alpha = .86$; and external, $\alpha = .64$).

Psychological adjustment. Three measures were included as indicators of the caregiver's psychological adjustment. The degree to which caregivers experience positive consequences from the caregiving experience was measured using a modified version (Kim et al., 2007) of a measure of Benefit Finding (Antoni et al., 2001). Each item had the stem "Providing care for [Survivor's full name] through his or her cancer experience" and ending with a benefit that might plausibly follow from that experience. Example items are "led me to be more accepting of things" and "made me more sensitive to family issues." Participants rated each item using a 5-point format ranging from 1 (*not at all*) to 5 (*extremely*). Items were averaged. The composite score had good internal consistency in this study ($\alpha = .95$).

As a second indicator of adjustment, the degree to which spousal caregivers were in general satisfied with their life during the past 4 weeks was measured by the Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). This 5-item scale (e.g., "In most ways my life is close to my ideal"), which used a 7-point Likert-style format ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), had good internal consistency in this study ($\alpha = .89$).

An index of the overall level of depressive symptoms experienced in the past 4 weeks was also administered. This was measured using the 20-item Center for Epidemiologic Studies Depression index (CES-D; Radloff, 1977), using a 4-point format ranging from 0 (*rarely or none of the time*) to 3 (*most or all of the time*). Item responses were summed. One fourth of caregivers (24.6%) in this sample had CES-D scores of 16 or above, the usual criterion for moderate depression.

Covariate. As an objective indicator of the severity of cancer of the care-recipient, which was comparable across the types of cancer studied, a (linear) severity of cancer index was created, based on the mortality rate for the type and stage of cancer and the time since diagnosis (Kim, Baker, & Spillers, in press). A higher score reflects having been diagnosed with a more severe or potentially fatal cancer. The severity of cancer index served as a covariate to test whether the effects of the main study variables on caregivers' quality of life are significant above and beyond the variance explained by the objective functional status of the care recipient.

Analysis Plan

Zero-order correlations among the primary study variables were examined for both genders. Then, the hypotheses and potential gender differences in the model were tested using structural equation modeling (SEM) with manifest variables (AMOS 6.0; Arbuckle & Wothke, 2005). The attachment variables were exogenous variables; the caregiving motives were treated as mediators, and each measure of adjustment—benefit finding, life satisfaction, and depression—was an endogenous variable. The cancer severity index was used as a covariate.

Measurement errors among attachment variables were allowed to correlate with each other because these measures assess relationship qualities that are not completely distinct. Measurement errors between autonomous motives and introjected motives, and between introjected motives and external motives, were also allowed to correlate with each other, based on the simplex structure of the self-regulation continuum (i.e., adjacent types of motives are more highly correlated with each other: Ryan & Connell, 1989).

We found that the assumption of multivariate normality was violated in the data. Thus, we implemented the Bollen–Stine (B-S) bootstrap method (Bollen & Stine, 1993) for correcting chi-square. Three model-fit indices are reported: goodness of fit index (GFI), the confirmatory fit index (CFI), and the root mean squared error of approximation (RMSEA). For the GFI, values of $> .90$ (Jöreskog & Sörbom, 1984), for the CFI, values of $> .95$, and for the RMSEA measure, values of $< .06$ (Hu & Bentler, 1999), reflect adequate fits of a specified model to the data. The study model was compared across genders.

Results

Descriptive statistics are in Table 1. The sample reported far more attachment security toward their spouse than anxiety or avoidance. The levels of the latter two are substantially lower than those reported in the college samples used to develop the MAQ (Carver, 1997). Table 1 also shows that respondents reported mostly autonomous motives for caregiving. The mean score on that scale was near the ceiling of possible scores. External reasons for caregiving were endorsed least. Two significant gender differences emerged. Husbands scored higher on external caregiving motives than wives, and wives reported more benefit finding than husbands.

Bivariate Analyses

Correlations among variables are shown separately for husbands and wives in Table 2.² Among husbands, attachment security correlated positively with autonomous reasons for care, benefit finding in caregiving, and life satisfaction; it correlated negatively with attachment anxiety, attachment avoidance, and depressive symptoms. Attachment anxiety correlated positively with avoidance, introjected and external motives for care, and depressive symptoms; it correlated negatively with life satisfaction. Attach-

² As noted earlier, some spouses were still providing care, whereas others were not. Preliminary analyses revealed no significant differences between these subsets on any outcome variable. Accordingly, the data are combined in all analyses reported here.

Table 1
Descriptive Statistics for Study Variables

	Possible range	All (<i>N</i> = 314) <i>M</i> (<i>SD</i>)	Husbands (<i>n</i> = 154) <i>M</i> (<i>SD</i>)	Wives (<i>n</i> = 160) <i>M</i> (<i>SD</i>)	<i>t</i>
Attachment qualities					
Security	1–4	3.69 (0.50)	3.71 (0.43)	3.68 (0.56)	–0.52
Anxiety	1–4	1.41 (0.58)	1.42 (0.59)	1.39 (0.56)	–0.42
Avoidance	1–4	1.32 (0.56)	1.36 (0.54)	1.29 (0.57)	–1.18
Caregiving motives					
Autonomous	1–7	6.77 (0.76)	6.73 (0.82)	6.80 (0.70)	0.84
Introjected	1–7	4.11 (2.41)	4.32 (2.35)	3.91 (2.45)	–1.51
External	1–7	2.79 (1.85)	3.01 (1.92)	2.58 (1.75)	–2.10*
Psychological adjustment					
Benefit finding in caregiving	1–5	3.35 (0.92)	3.16 (0.92)	3.54 (0.88)	3.75***
Life satisfaction	1–7	5.05 (1.37)	4.99 (1.24)	5.11 (1.49)	0.74
Depressive symptom	0–60	10.32 (10.10)	10.46 (10.39)	10.19 (9.84)	–0.23
Gender: female	—	50.5%	—	—	—
Cancer Severity Index	0–1	0.18 (0.25)	0.18 (0.24)	0.19 (0.27)	0.13

* $p < .05$. *** $p < .001$.

ment avoidance correlated positively with depressive symptoms and negatively with life satisfaction. Autonomous reasons for providing care correlated negatively with depressive symptoms. Introjected reasons for providing care correlated positively with external reasons for providing care and with depressive symptoms, and correlated negatively with life satisfaction. Benefit finding correlated positively with life satisfaction, and life satisfaction correlated negatively with depressive symptoms.

The majority of associations that were significant among husbands were also significant among wives. However, there were some differences. Some associations were significant only among wives: attachment anxiety negatively related to benefit finding; autonomous reasons for providing care positively related to benefit finding; benefit finding positively related to the cancer severity; and life satisfaction negatively related to the cancer severity. Some associations were significant only among husbands: attachment anxiety and attachment avoidance with external reasons for caregiving; autonomous reasons for caregiving with depressive symptoms; introjected reasons for caregiving with life satisfaction and depressive symptoms.

SEM Analyses

The study's hypotheses were tested by SEM. The fit of the overall model (see Figure 1), ignoring gender, was acceptable: multivariate kurtosis = 71.29, $p < .001$; $\chi^2(10, N = 314) = 112.38$, $BS p = .01$; $GFI = .94$; $CFI = .83$; and $RMSEA = .18$. After allowing two measurement error terms³ to correlate with each other to improve the model fit, the overall model fit the data satisfactorily: multivariate kurtosis = 71.29, $p < .001$; $\chi^2(8, N = 314) = 9.33$, $BS p = .29$; $GFI = .994$; $CFI = .998$; and $RMSEA = .023$.

The next step was to test whether the model applies comparably to both genders. This was done by testing two additional models, one in which genders were examined separately without constraining relations between variables to be equal (unconstrained model), the other in which relations between variables were constrained to be equal between genders (constrained model). The unconstrained

model fit the data satisfactorily: multivariate kurtosis = 59.25, $p < .001$; $\chi^2(16, N = 314) = 16.63$, $BS p = .41$; $GFI = .990$; $CFI = .999$; and $RMSEA = .011$. The constrained model also fit the data satisfactorily: multivariate kurtosis = 59.25, $p < .001$; $\chi^2(46, N = 314) = 64.57$, $BS p = .41$; $GFI = .961$; $CFI = .970$; and $RMSEA = .036$. The fit of the constrained model was significantly worse than that of the unconstrained model, however: $\chi^2_{diff}(30) = 47.94$, $p < .03$. This indicates that the relations among variables were not comparable for the two genders, and that the genders therefore should be examined separately.

As shown in Figures 1a and 1b, several paths were significant for both genders. Attachment security related to endorsement of autonomous reasons for providing care, to finding benefit in caregiving, and to greater satisfaction with life. Attachment anxiety related to greater endorsement of introjected motives for providing care and to higher depressive symptoms. Although significant for both groups, the direct path from attachment anxiety to depression was significantly stronger for wives than for husbands ($z = 5.02$, $p < .001$).

Some additional paths were significant for only one or the other genders. Among husbands, autonomous and introjected motives both related to adjustment (Figure 1a): There was a significant path from autonomous reasons for caregiving to lower depression and significant paths from introjected motives for caregiving to less life satisfaction and higher depression.

Among wives, a significant path went from attachment anxiety to less life satisfaction (Figure 1b). Autonomous motives for caregiving related to finding more benefit in caregiving but, unexpectedly, related to less rather than more life satisfaction. Note, however, this association had not appeared in the zero-order correlation, suggesting a suppression effect due to a high correlation between attachment security and autonomous motives of caregiving (MacKinnon, Krull, & Lockwood, 2000). To test this possibility, we reran the model excluding attachment security. In this

³ Error terms allowed to correlate with each other were between benefit finding and life satisfaction; and between life satisfaction and CES-D.

Table 2
Zero-Order Correlation Coefficients Among Study Variables

Variables	1	2	3	4	5	6	7	8	9	10
1. Security	—	-.30***	.47***	.23**	-.09	-.13	.24**	.25***	-.18*	.09
2. Anxiety	-.42***	—	.32***	-.02	.18*	.17*	-.01	-.17*	.25**	-.10
3. Avoidance	-.64***	.32***	—	-.15†	.03	.15†	-.11	-.18*	.19*	-.09
4. Autonomous	.32***	-.08	-.18*	—	.08	-.07	.14	.11	-.17*	.12
5. Introjected	.01	.16*	-.03	.09	—	.57***	.07	-.25**	.16*	.07
6. External	-.08	.09	.01	-.01	.50***	—	.09	-.08	.03	-.02
7. Benefit finding	.30***	-.24**	-.13	.27***	.00	.09	—	.26***	-.06	.03
8. Life satisfaction	.38***	-.56***	-.21**	-.03	-.12	-.05	.22**	—	-.55***	-.12
9. Depression	-.20**	.62***	.14†	.01	.12	-.02	-.11	-.64***	—	.14
10. CSI	-.12	-.03	-.01	.10	-.09	.04	.18*	-.20*	.12	—

Note. $n = 154$, for husbands (above diagonal); $n = 160$ for wives (below diagonal). Security, Anxiety, and Avoidance are attachment quality measures; Autonomous, Introjected, and External are motives for providing care; Benefit finding (in caregiving), Life satisfaction, and Depression are psychological adjustment outcomes; CSI (Cancer Severity Index) is a covariate.

† $p < .08$. * $p < .05$. ** $p < .01$. *** $p < .001$.

analysis, the path from autonomous motives to life satisfaction became nonsignificant ($p > .43$). Other significant paths remained significant. In this analysis, one new path from attachment anxiety to lower benefit finding became significant ($\beta = -.22, p > .01$).

As shown in Table 3 and Figure 1a, the relation among husbands between attachment security and depression tended to be mediated by autonomous caregiving motives (Sobel test for indirect effect = $-1.72, p < .08$). Similarly, the relation between attachment anxiety and life satisfaction tended to be mediated by introjected caregiving motives (Sobel test for indirect effect = $-1.86, p < .06$). The relation between attachment anxiety and depression, however, was not mediated by introjected caregiving motives (Sobel test for indirect effect = $1.51, p < .13$). Caregiving motives accounted for 2.1% of variances in benefit finding ($p < .34$); 6.6% in life satisfaction ($p < .02$); and 5.5% in depression ($p < .03$), above and beyond the variances accounted for by attachment styles.

As shown in Table 3 and Figure 1b, the relation among wives between attachment security and benefit finding was fully mediated by autonomous caregiving motives (Sobel test for indirect effect = $2.72, p < .01$). Finally, the relation between attachment security and life satisfaction was not mediated by autonomous caregiving motives (Sobel test for indirect effect = $-.35, p < .73$). Caregiving motives accounted for 5.6% of the variance in benefit finding ($p < .02$); 2.0% in life satisfaction ($p < .19$); and 1.0% in depression ($p < .46$), above and beyond the variance accounted for by attachment styles.

The level of cancer severity of the care recipient related to greater depressive symptoms among caregivers for both husbands and wives, and related to higher benefit finding and to lower life satisfaction among wives only.

Because these results are derived from cross-sectional data, an alternative model was considered, testing whether attachment qualities and caregiving motives are both directly related to psychological adjustment. In this alternative model, attachment and caregiving motives were treated as exogenous variables and psychological adjustment variables as endogenous variables. This alternative model fit the data satisfactorily, multivariate kurtosis = $59.25, p < .001$; $\chi^2(34, N = 314) = 59.84, BS p = .29$; GFI = $.965$; CFI = $.958$; and RMSEA = $.049$. Paths from attachment styles and caregiving motives to psychological adjustment vari-

ables remained significant. However, this alternative model fit significantly worse than the a priori model, $\chi^2_{diff}(18) = 43.21, p < .001$. This suggests that allowing indirect relations between attachment qualities and caregiver adjustment, through caregiving motives, provides better prediction of a caregiver's adjustment than does a model with just direct links from both attachment styles and caregiving motives.

Discussion

We examined relationship-specific attachment qualities, caregiving motives, and psychological adjustment in a sample of adult spousal caregivers of cancer survivors. Both attachment and the reasons endorsed for providing care played important roles in predicting the well-being of the caregivers. There was also evidence that caregiving motives mediated the link between attachment patterns and caregiver well-being, particularly among men. These results are conceptually consistent with findings from prior studies (e.g., B. C. Feeney & Collins, 2001; Kim, 2005; Mikulincer et al., 2001), but extend these findings in several ways. First, we showed that attachment predicts responses to partners in need when the context is caregiving for a spouse with a serious medical illness. The findings also extend the literature on cancer caregiving by drawing attention to the important role of caregivers' motives and qualities of the relationship in their own adjustment to their spouse's cancer. Indeed, our findings provide evidence that the caregiver's characteristics, independent of the health status of the care-recipient (measured objectively), are key factors in the caregiver's well-being (Pinquart & Sörensen, 2003).

Attachment Theory

Let us consider more closely how the results bear on the theories under study. First consider attachment theory. Attachment security with respect to the spouse, which reflects comfort with being close and interdependent, related consistently to endorsing autonomous reasons for providing care to the loved one, finding more benefit in caregiving, and greater life satisfaction.

Attachment anxiety with respect to the spouse, which reflects a hypervigilant focus on relationship threats, feelings of conditional

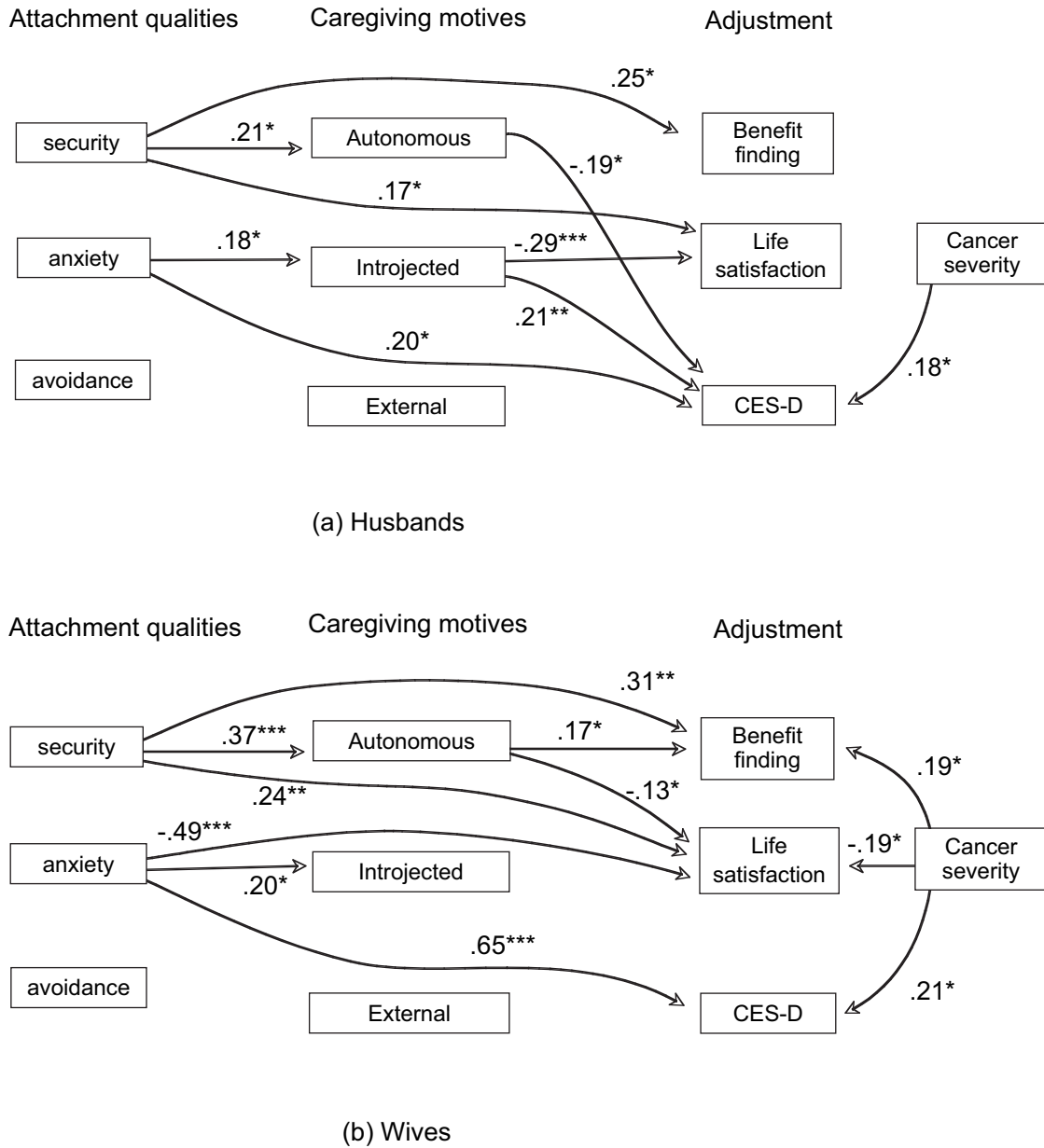


Figure 1. Unconstrained model for gender comparison. (a) Husbands, $n = 154$, (b) Wives, $n = 160$. Numbers are standardized regression coefficients. Measurement errors and covariances were included in the analysis (see the text for details) but are omitted from the figure for graphical simplicity. * $p < .05$. ** $p < .01$. *** $p < .001$.

acceptance, and desires for union with the other person, related consistently to introjected motives for caregiving, and to greater depression. Among wives, anxious attachment also related to lower life satisfaction.

In contrast to the findings for security and anxiety, avoidance did not relate to any caregiving motive or adjustment variable in the SEM analyses. In the zero-order correlations, avoidance had related to less endorsement of autonomous reasons for caregiving (marginally for husbands, significantly for wives), to less life satisfaction, and to more depression (significantly for husbands, marginally for wives). None of these associations sur-

vived in the SEM analyses. This appears attributable to the relatively strong negative relation between attachment avoidance and attachment security. The resulting multicollinearity between the two might have eliminated any effects of avoidance in the SEM analyses. This pattern of findings thus provides some support for the idea that security and avoidance may be profitably viewed as opposite ends of a continuum rather than as distinct qualities (e.g., Brennan, Clark, & Shaver, 1998).

As a group, these findings fit nicely with attachment theory. After an extensive review, Mikulincer and Shaver (2003) indicated that most, if not all, of the studies published to date fit the view that

Table 3
Standardized Regression Coefficients From Unconstrained Structural Equation Models

Path	Husbands			Wives		
	Total	Direct	Indirect	Total	Direct	Indirect
Security → Autonomous	.21*	.21*	—	.37***	.37***	—
Security → Introjected	-.06	-.06	—	.06	.06	—
Security → External	-.05	-.05	—	-.09	-.09	—
Security → Benefit finding	.26**	.25*	.01	.36***	.31**	.05
Security → Life satisfaction	.21*	.17*	.04	.19**	.24**	-.05
Security → Depression	-.09	-.04	-.05	.10	.08	.02
Anxiety → Autonomous	.07	.07	—	.07	.07	—
Anxiety → Introjected	.18*	.18*	—	.20*	.20*	—
Anxiety → External	.13	.13	—	.07	.07	—
Anxiety → Benefit finding	.08	.06	.02	-.13†	-.14†	.01
Anxiety → Life satisfaction	-.10	-.07	-.03	-.51***	-.49***	-.02
Anxiety → Depression	.21*	-.20*	.01	.66***	.65***	.01
Avoidance → Autonomous	-.07	-.07	—	.04	.04	—
Avoidance → Introjected	-.06	-.06	—	-.05	-.05	—
Avoidance → External	.08	.08	—	-.07	-.07	—
Avoidance → Benefit finding	-.01	-.02	.01	.14	.14	.00
Avoidance → Life satisfaction	-.07	-.09	.02	.07	.08	-.01
Avoidance → Depression	.09	.10	-.01	-.01	-.01	.00
Autonomous → Benefit finding	.09	.09	—	.17*	.17*	—
Autonomous → Life satisfaction	.10	.10	—	-.10	-.10	—
Autonomous → Depression	-.19*	-.19*	—	.01	.01	—
Introjected → Benefit finding	.01	.01	—	-.05	-.05	—
Introjected → Life satisfaction	-.29***	-.29***	—	-.08	-.08	—
Introjected → Depression	.21*	.21*	—	.09	.09	—
External → Benefit finding	.12	.12	—	.14†	.14†	—
External → Life satisfaction	.13	.13	—	.06	.06	—
External → Depression	-.15	-.15	—	-.12†	-.12†	—
CSI → Benefit finding	.01	.01	—	.19**	.19**	—
CSI → Life satisfaction	-.14†	-.14†	—	-.19**	-.19**	—
CSI → Depression	.18*	.18*	—	.21***	.21***	—

Note. Security, Anxiety, and Avoidance are attachment quality measures; Autonomous, Introjected, and External are motives for providing care; CSI = Cancer Severity Index.

† $p < .08$. * $p < .05$. ** $p < .01$. *** $p < .001$.

anxious attachment involves hyperactivation of the attachment system whereas avoidant attachment involves deactivation of the attachment system; our results provide further support for this conclusion regarding attachment in the spousal relationship. However, the paths by which attachment insecurity related to poor psychological adjustment remained unclear in past research. Our findings shed some light on one part of that pathway by suggesting that hyperactivation of the attachment system may induce a controlled orientation to caregiving activities themselves. These findings thus suggest a useful elaboration of attachment theory through the application of some principles driven from self-determination theory (SDT).

SDT

With respect to predictions from SDT, autonomous motives consistently related to attachment security, and introjected motives consistently related to attachment anxiety. These findings fit our extrapolations from SDT. Associations with indicators of adjustment differed across genders. Among husbands, autonomous motives for caregiving predicted less depression. Among wives, autonomous reasons for caregiving predicted more benefit finding.

Autonomous motives for caregiving also mediated the links of attachment security with well-being.

Introjected motives related to poorer adjustment, as predicted by SDT, but only among husbands. Specifically, endorsement of introjected motives on the part of husbands related both to less life satisfaction and to greater depression. Among wives, in contrast, endorsement of these motives did not relate to any index of well-being.

The results clearly illustrate that autonomous and introjected motives differ (Ryan & Deci, 2002): The motives related to different relationship qualities as well as to differences in psychological adjustment. Hyperactivation of the attachment system appears to lead to a sense of pressure in providing care to the spouse with cancer; our mediational analyses suggest that this, in turn, may lead to more depression. On the other hand, activation of secure attachment systems appears to help persons provide care from genuine concern for the spouse and to help them acknowledge that caregiving can provide meaning and purpose in life. This intrapsychic experience, in turn, relates to less depression and more benefit finding.

Among wives, one relatively small, anomalous association between autonomous motives and lower life satisfaction emerged in the

SEM analyses that had not been present in the zero-order correlations. Because this association was not predicted, it did not exist in the zero-order correlations, its magnitude was relatively small, and it became nonsignificant after excluding a variable that potentially caused a suppression effect, its importance is questionable.

Further Theoretical Implications

There are at least three further theoretical points worth making. First, these results highlight the importance of empirically distinguishing among motives for providing assistance to a spouse in the context of cancer care. We approached this issue from a theoretical vantage point in which different motives were expected to have different implications for well-being. Autonomous motives were quite different from introjected motives, both in personality correlates (i.e., attachment qualities) and in their relations to adjustment among the husbands. Among husbands, the two motives related in opposite directions to depression. Clearly these motives are different in meaningful ways (Ryan & Deci, 2002). Those differences should be taken into account when thinking about caregiving, just as in other domains.

A second theoretical implication is that the findings appear to suggest a relationship between introjected motives and the more general tendency to be motivated by anxiety (in this case, anxiety about one's spousal attachment). It has elsewhere been suggested that fear-based processes, which appear to be at the core of anxious attachment (Carver, 1997), represent a particularly potent source of controlled motives in human behavior (Carver & Scheier, 1999). The pattern of findings regarding introjected motives appears consistent with that suggestion.

A third contribution concerns gender differences. In this study, attachment qualities tended to relate to well-being directly among wives; motives tended to play a larger role in mediating the effects of attachment qualities among husbands. Why? Perhaps this reflects the fact that caregiving is traditionally expected of women in most cultures, although we acknowledge that more men are taking on caregiving roles (Harris & Long, 1999; Siriopoulos, Brown, & Wright, 1999) as more people adopt egalitarian perspectives on work and family responsibilities (e.g., Barnett & Rivers, 1996). Perhaps, however, because the expectation of caregiving remains less instilled in men than in women, individual differences in motives for caregiving are better predictors of well-being among men than among women. In contrast, because relationships play a key role in women's well-being and women have long been socialized as caregivers (Chodorow, 1978; Gilligan, 1982), relationship qualities themselves, rather than caregiving motives, related more to well-being among women than among men.

Limitations and Future Directions

Several limitations should be noted. First, the findings are from a cross-sectional analysis, which precludes definitive causal interpretations. Second, potential moderating effects of caregivers' demographic characteristics such as age, education, income, and type of cancer were not tested due to lack of power to address these concerns. Third, the internal consistency of the measures for attachment avoidance and external caregiving motives were at the lower end of the conventionally acceptable range (Nunnally, 1978). Thus, findings related to attachment avoidance and external

motives for caregiving should be interpreted with caution. Fourth, the data come from a sample of caregivers who were willing to give their time for this survey, caregivers who were mostly White, relatively educated and affluent, and less likely to endorse introjected or external motives for caregiving. Generalizability of the findings thus may be limited. Future studies should also examine plausible associations between caregivers' levels of education and the study variables, namely, attachment styles, caregiving motives, and adjustment outcomes. Fifth, the sample was also heterogeneous with respect to current caregiving demands, as some spouses were still actively providing care whereas others were not. Although we did not find differences between these groups on the study variables, it may be that those who are still actively providing care differ in important ways from those whose spouses' are no longer receiving treatment. Finally, individuals may find it difficult to admit that they have introjected or external reasons for giving care to a sick spouse, or that they are less than securely attached to that spouse, so future research may want to control for socially desirable response styles.

Conclusions

Over 10 million Americans are cancer survivors. This number is predicted to double by 2030 as the population ages and as more cancer patients survive longer (Ries et al., 2005). Most survivor represents a family who must also adjust to the individual's cancer. Despite the fast-growing population of cancer caregivers, large gaps remain in our understanding of factors that contribute to caregivers' experience of helping their spouses. Our study suggests that husbands' reasons for providing care, and wives' attachment qualities, play important roles in their well-being. The findings indicate that caregivers who are likely to suffer from caregiving experiences can be identified by their attachment orientation. Such caregivers, particularly men who are involved in their wives' cancer care because of concerns about societal judgment or pressure, might benefit from programs that allow them to assimilate the value of the caregiver role. That may in turn help them to be satisfied with life in general as well as to reduce experience of depressive symptoms.

References

- Antoni, M. H., Lehman, J. M., Kilbourn, K. M., Boyers, A. E., Culver, J. L., Alferi, S. M., et al. (2001). Cognitive-behavioral stress management intervention decreases the prevalence of depression and enhances benefit finding among women under treatment for early-stage breast cancer. *Health Psychology, 20*, 20–32.
- Arbuckle, J. L., & Wothke, W. (2005). *Amos users' guide, version 6.0*. Chicago: SmallWaters.
- Baldwin, M. W., Keelan, J. P. R., Fehr, B., Enns, V., & Koh-Rangarajoo, E. (1996). Social-cognitive conceptualization of attachment working models: Availability and accessibility effects. *Journal of Personality and Social Psychology, 71*, 94–109.
- Barnett, R. C., & Rivers, C. (1996). *She works, he works: How two-income families are happy, healthy, and thriving*. Cambridge, MA: Harvard University Press.
- Besser, A., & Priel, B. (2005). The apple does not fall far from the tree: Attachment styles and personality vulnerabilities to depression in three generations of women. *Personality and Social Psychology Bulletin, 31*, 1052–1073.
- Bollen, K. A., & Stine, R. A. (1993). Bootstrapping goodness-of-fit mea-

- tures in structural equation models. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 111–135). Newbury Park, CA: Sage.
- Bowlby, J. (1982). *Attachment and loss* (2nd ed.). New York: Basic Books.
- Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46–76). New York: Guilford.
- Brody, E. M. (1990). *Women in the middle: Their parent-care years*. New York: Springer.
- Carnelley, K. B., Pietromonaco, P. R., & Jaffe, K. (1996). Attachment, caregiving, and relationship functioning in couples: Effects of self and partner. *Personal Relationships, 3*, 257–278.
- Carver, C. S. (1997). Adult attachment and personality: Converging evidence and a new measure. *Personality and Social Psychology Bulletin, 23*, 865–883.
- Carver, C. S., & Scheier, M. F. (1999). Stress, coping, and self-regulatory processes. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality* (2nd ed., pp. 553–575). New York: Guilford.
- Chodorow, N. (1978). *The reproduction of mothering*. Berkeley: University of California Press.
- Ciechanowski, P., Sullivan, M., Jensen, M., Romano, J., & Summers, H. (2003). The relationship of attachment style to depression, catastrophizing and health care utilization in patients with chronic pain. *Pain, 104*, 627–637.
- Collins, C., & Jones, R. (1997). Emotional distress and morbidity in dementia carers: A matched comparison of husbands and wives. *International Journal of Geriatric Psychiatry, 12*, 1168–1173.
- Crispi, E. L., Schiaffino, K., & Berman, W. H. (1997). The contribution of attachment to burden in adult children of institutionalized parents with dementia. *Gerontologist, 37*, 52–60.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Deci, E. L., & Ryan, R. M. (2002). *Handbook of self-determination research*. Rochester, NY: University of Rochester Press.
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with the life scale. *Journal of Personality Assessment, 49*, 71–75.
- Feeney, B. C., & Collins, N. L. (2001). Predictors of caregiving in adult intimate relationships: An attachment theoretical perspective. *Journal of Personality and Social Psychology, 80*, 972–994.
- Feeney, J. A. (1996). Attachment, caregiving, and marital satisfaction. *Personal Relationships, 3*, 401–416.
- Fraley, R. C., & Shaver, P. R. (1998). Airport separations: A naturalistic study of adult attachment dynamics in separating couples. *Journal of Personality and Social Psychology, 75*, 1198–1212.
- Gilligan, C. (1982). *In a different voice: Psychological theory and women's development*. Cambridge, MA: Harvard University Press.
- Given, B. A., Given, C. W., & Kozachik, S. (2001). Family support in advanced cancer. *CA: A Cancer Journal for Clinicians, 51*, 213–231.
- Haley, W. E., LaMonde, L. A., Han, B., Burton, A. M., & Schonwetter, R. (2003). Predictors of depression and life satisfaction among spousal caregivers in hospice: Application of a stress process model. *Journal of Palliative Medicine, 6*, 215–224.
- Hankin, B. L., Kassel, J. D., & Abela, J. R. (2005). Adult attachment dimensions and specificity of emotional distress symptoms: Prospective investigations of cognitive risk and interpersonal stress generation as mediating mechanisms. *Personality and Social Psychology Bulletin, 31*, 136–151.
- Harris, P. B., & Long, S. O. (1999). Husbands and sons in the United States and Japan: Cultural expectations and caregiving experiences. *Journal of Aging Studies, 13*, 241–267.
- Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology, 52*, 511–524.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indices in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1–55.
- Hull, M. M. (1992). Coping strategies of family caregivers in hospice homecare. *Oncology Nursing Forum, 19*, 1179–1187.
- Jöreskog, K. G., & Sörbom, D. (1984). *LISREL 6 user's guide* (3rd ed.). Mooresville, IL: Scientific Software.
- Kim, Y. (2005). Emotional and cognitive consequences of adult attachment: The mediating effect of the self. *Personality and Individual Differences, 39*, 913–923.
- Kim, Y., Baker, F., & Spillers, R. L. (in press). Cancer caregivers' quality of life: Effects of gender, relationship, and appraisal. *Journal of Pain and Symptom Management*.
- Kim, Y., & Carver, C. S. (2007). Frequency and difficulty in caregiving among spouses of individuals with cancer: Effects of adult attachment and gender. *Psycho-Oncology, 16*, 714–728.
- Kim, Y., Duberstein, P. R., Sörensen, S., & Larson, M. R. (2005). Levels of depressive symptoms in spouses of people with lung cancer: Effects of personality, social support, and caregiving burden. *Psychosomatics, 46*, 123–130.
- Kim, Y., Schulz, R., & Carver, C. S. (2007). Benefit finding in the cancer caregiving experience. *Psychosomatic Medicine, 69*, 283–291.
- Kobak, R. R., & Sceery, A. (1988). Attachment in late adolescence: Working models, affect regulation, and representations of self and others. *Child Development, 59*, 135–146.
- Kunce, L. J., & Shaver, P. R. (1994). An attachment-theoretical approach to caregiving in romantic relationships. In *Advances in personal relationships* (pp. 205–237). London: Kingsley.
- LaGuardia, J. G., Ryan, R. M., Couchman, C. E., & Deci, E. L. (2000). Within-person variation in security of attachment: A self-determination theory perspective on attachment, need fulfillment, and well-being. *Journal of Personality and Social Psychology, 79*, 367–384.
- MacKinnon, D. P., Krull, J. L., & Lockwood, C. M. (2000). Equivalence of the mediation, confounding and suppression effect. *Prevention Science, 1*, 173–181.
- Marchand, J. F. (2004). Husbands' and wives' marital quality: The role of adult attachment orientations, depressive symptoms, and conflict resolution behaviors. *Attachment and Human Development, 6*, 99–112.
- Martire, L. M., Stephens, M. A., & Townsend, A. L. (2000). Centrality of women's multiple roles: Beneficial and detrimental consequences for psychological well-being. *Psychology and Aging, 15*, 148–156.
- McCausland, J., & Pakenham, K. I. (2003). Investigation of the benefits of HIV/AIDS caregiving and relations among caregiving adjustment, benefit finding, and stress and coping variables. *AIDS Care, 15*, 853–869.
- Mikulincer, M., Gillath, O., Halevy, V., Avihou, N., Avidan, S., & Eshkoli, N. (2001). Attachment theory and reactions to others' needs: Evidence that activation of the sense of attachment security promotes empathic responses. *Journal of Personality and Social Psychology, 81*, 1205–1224.
- Mikulincer, M., & Shaver, P. R. (2003). The attachment behavioral system in adulthood: Activation, psychodynamics, and interpersonal processes. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (pp. 53–152). San Diego, CA: Academic.
- Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). New York: McGraw-Hill.
- Pierce, T., & Lydon, J. E. (2001). Global and specific relational models in the experience of social interactions. *Journal of Personality and Social Psychology, 80*, 613–631.
- Pinquart, M., & Sörensen, S. (2003). Associations of stressors and uplifts of caregiving with caregiver burden and depressive mood: A meta-analysis. *Journal of Gerontology B: Psychological & Social Sciences, 58*, 112–128.

- Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385–401.
- Reise, S. P., Waller, N. G., & Comrey, A. L. (2000). Factor analysis and scale revision. *Psychological Assessment, 12*, 287–297.
- Ries, L. A. G., Eisner, M. P., Kosary, C. L., Hankey, B. F., Miller, B. A., Clegg, L., et al. (Eds.). (2005). *SEER cancer statistics review, 1975–2002*. Bethesda, MD: National Cancer Institute. Retrieved September 5, 2007, from http://seer.cancer.gov/csr/1975_2002/
- Rose-Rego, S. K., Strauss, M. E., & Smyth, K. A. (1998). Differences in the perceived well-being of wives and husbands caring for persons with Alzheimer's disease. *Gerontologist, 38*, 224–230.
- Russell, D. W. (2002). In search of underlying dimensions: The use (and abuse) of factor analysis in *Personality and Social Psychology Bulletin*. *Personality and Social Psychology Bulletin, 28*, 1629–1646.
- Ryan, R. M., & Connell, J. P. (1989). Perceived locus of causality and internalization: Examining reasons for acting in two domains. *Journal of Personality and Social Psychology, 57*, 749–761.
- Ryan, R. M., & Deci, E. L. (2002). An overview of self-determination theory: An organismic-dialectical perspective. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 3–33). Rochester, NY: University of Rochester Press.
- Shaver, P. R., & Mikulincer, M. (2002). Dialogue on adult attachment: Diversity and integration. *Attachment and Human Development, 4*, 243–257.
- Shaver, P. R., Schachner, D. A., & Mikulincer, M. (2005). Attachment style, excessive reassurance seeking, relationship processes, and depression. *Personality and Social Psychology Bulletin, 31*, 343–359.
- Siriopoulos, G., Brown, Y., & Wright, K. (1999). Caregivers of wives diagnosed with Alzheimer's disease: Husbands' perspectives. *American Journal of Alzheimer's Disease, 14*, 79–87.
- Smith, T., Stein, K. D., Mehta, C. C., Kaw, C., Kepner, J., Buskirk, T., et al. (2007). The rationale, design, and implementation of the American Cancer Society's studies of cancer survivors. *Cancer, 109*, 1–12.
- Wei, M., Shaffer, P. A., Young, S. K., & Zakalik, R. A. (2005). Adult attachment, shame, depression, and loneliness: The mediation role of basic psychological needs satisfaction. *Journal of Counseling Psychology, 52*, 591–601.
- Westmaas, J. L., & Silver, R. C. (2001). The role of attachment in responses to victims of life crises. *Journal of Personality and Social Psychology, 80*, 425–438.
- Zautra, A. J. (2003). *Emotions, stress, and health*. New York: Oxford University Press.