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Attachment styles in patients with lung cancer and their spouses: associations with patient and spouse adjustment

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Abstract

Purpose—This study examined attachment styles in patients with lung cancer and their spouses and associations between attachment styles and patient and spouse adjustment.

Methods—One hundred twenty-seven patients with early stage lung cancer completed measures of attachment style, marital quality, self-efficacy, pain, depression, anxiety, and quality of life. Their spouses completed measures of attachment style, marital quality, self-efficacy, caregiver strain, and mood.

Results—Analyses indicated that, among patients, those high in either attachment anxiety or avoidance had significantly higher levels of anxiety and poorer social well-being. Attachment avoidance was also significantly associated with higher levels of depression and poorer marital quality and functional well-being. Spouse avoidant attachment was significantly associated with patient reports of increased pain and poorer functional well-being, and spouse anxious attachment was associated with poorer patient marital quality. Among spouses, those high in attachment avoidance reported significantly higher levels of caregiver strain, anger, depressed mood, and poorer marital quality; those high in attachment anxiety reported higher anxious mood. Dyads in which both partners were insecurely attached had significantly poorer adjustment compared to dyads in which both partners reported secure attachment.

Conclusions—These preliminary findings raise the possibility that attachment styles of cancer patients and their spouses as individuals and as a dyad may be important factors affecting adjustment in multiple domains.

Keywords

Attachment; Lung cancer; Adjustment; Quality of life; Couples; Caregiving

The diagnosis of a life-threatening illness such as lung cancer is fraught with a myriad of stresses and challenges for patients and their loved ones. In addition to negotiating the medical demands, patients and family members often face significant intrapersonal and interpersonal challenges. Thrust into new roles of patient and caregiver, they often must also confront the life-limiting nature of the patient's disease. For married patients, the spouse is often the primary caregiver and is deeply impacted by the patient's cancer [1, 2]. This combination of life-threatening illness and the necessity for a couple to enter new roles of caregiver and recipient provides fertile ground for theoretical analysis in terms of attachment theory [3].

According to Bowlby [3], the attachment system is formed during infancy and early childhood based upon the nature of the child's interactions with primary caregivers, particularly interactions surrounding affect regulation and management of distress. Based on the pattern of caregiver responses, the child develops specific internal mental models regarding themselves and others that form the basis of enduring strategies for need satisfaction and affect regulation, i.e., "attachment styles". Once formed, attachment styles affect cognitions, emotions, and behaviors in virtually all domains of life [4–6]. Importantly, attachment behaviors are triggered by threats to the subjective availability of the caregiver as well as by states of internal distress such as that caused by illness or pain. Thus, a cancer diagnosis is likely to represent a salient threat triggering attachment behaviors in both patients (due to illness) and their spouses (who may fear losing his or her partner).

Attachment styles vary along two dimensions: *anxiety* (worry over the availability, responsiveness, and positive regard of others) and *avoidance* (discomfort with closeness and interdependence). Individuals who are high on either dimension may have difficulty adapting to cancer as either a patient or caregiver. For instance, individuals high in attachment anxiety tend to have enhanced and prolonged emotional distress in response to threat, use less effective coping strategies, and be hypervigilant regarding the availability of relationship partners. Among patients with end-stage cancer, an anxious attachment style has been associated with high levels of negative affect [7]. In contrast, individuals high in attachment avoidance tend to downplay or minimize threat and to underutilize social support; they are often described as "compulsively self-reliant" [5, 6]. While individuals high in avoidant attachment may not report elevated levels of distress, their adjustment to serious illness may be compromised in other ways. For example, among patients with diabetes, avoidant attachment has been associated with poorer health behaviors, medication adherence, and patient-provider relationships [8].

Although attachment style is formed in the context of the person as *recipient* of caregiving, attachment style is also strongly related to the feelings and behaviors of *caregivers*. Evidence from laboratory studies indicates that avoidant individuals are less sensitive and responsive to their partner's needs, while anxious individuals tend to engage in over-involved and controlling forms of caregiving and to report higher levels of personal distress in response to their partner's distress [9]. Among family caregivers of cancer patients, insecure attachment has been associated with higher levels of caregiver stress [10] and depressive symptoms [10, 11].

Prior studies have provided preliminary evidence that insecure attachment is associated with poorer functioning in cancer patients and their caregivers; however, they are limited by their

focus on a narrow set of measures of adjustment (primarily psychological distress and caregiver burden) and by their failure to consider of the attachment styles of both members of the dyad (patient and caregiver) simultaneously. To date, there has been only one study that included assessments of attachment in both patients and spouse caregivers [12]. However, it did not explore the potentially important impact of the specific combination of patient-spouse attachment styles. For instance, there may be an additive effect of insecure attachment, e.g., when both partners are insecurely attached, adjustment may be poorer than when one or both are securely attached.

The current study was designed to examine associations between attachment and several domains of adjustment in patients with lung cancer and their spouses. We hypothesized that (a) patients high in anxious and avoidant attachment would report higher levels of pain and psychological distress, and lower levels of quality of life, marital quality, and self-efficacy for symptom management; (b) spouses high in anxious and avoidant attachment styles would report higher levels of caregiver strain and negative mood, and lower levels of marital quality and self-efficacy for helping the patient manage symptoms; (c) patient anxious and avoidant attachment would be negatively associated with spouse adjustment after controlling for spouse attachment, and spouse anxious and avoidant attachment would be negatively associated with patient adjustment after controlling for patient attachment. We also conducted exploratory analyses examining associations between dyad attachment styles and patient and spouse adjustment. We hypothesized that dyads in which both partners were insecure would report poorer adjustment relative to dyads in which one or both partners were secure.

Method

Participants

Participants were 127 patients diagnosed with early stage lung cancer and their spouses, married for an average of 36.9 year ($SD=15.2$). Patients were 79 men and 48 women; average age of 65.4 years ($SD=9.3$); 90.6% White and 7.8% African American. One hundred twenty-three were diagnosed with stage I–III non-small cell lung cancer and four with limited stage small cell lung cancer. The average time since diagnosis was 18.4 months (20 days–16 years; $SD=28.5$ months). Spouses were 48 men and 79 women; mean age 62.8 ($SD=10.5$).

The participants were enrolled in a larger treatment outcome study [13]. The entry criteria included having (a) a diagnosis of early stage lung cancer, (b) no other cancers in the past 5 years, (c) ability to read/speak English, and (d) a caregiver who was also willing to participate. Only dyads in which the caregiver was the patient's spouse were included in the current report. Details regarding participant recruitment can be found in Porter et al. [13].

T tests and chi-square analyses were used to examine differences between participants who were included in the current report ($n=127$) vs. those who were not included ($n=107$) on demographic variables (age, sex, and education), patient medical variables (cancer stage, treatment, and time since diagnosis), and self-report variables (patient and spouse reports of marital quality and self-efficacy; patient reports of depressive symptoms, anxiety, pain, and quality of life; and spouse reports of caregiver strain and mood). Patients included in the current study were more likely to be male than patients who were not included (62% vs. 40%; $X^2=12.49$, $p=0.0004$), and spouses included were more likely to be male than caregivers who were not included (38% vs. 23%; $X^2=5.07$, $p=0.02$). The spouses included were also significantly older than caregivers who were not included [mean=62.7 years ($SD=10.5$) vs. 55.1 years ($SD=14.6$); $t(232)=-4.63$, $p<0.0001$]. These differences are likely due to the requirement that dyads in the current study be married; caregivers who were not

spouses tended to be adult daughters. Spouses included in the study also had higher levels of education [$t(232)=-2.21, p=0.03$] and reported significant lower levels of anger [$t(232)=2.08, p=0.04$] and depression [$t(232)=19.4, p=0.05$] than caregivers who were not included.

Procedures

Participants were recruited from the Duke Thoracic Oncology Program, the Durham VA, and several community oncology clinics. Questionnaire data were collected via telephone surveys conducted separately with patients and caregivers. Medical information was extracted from the patient's medical record. All procedures were approved by the Duke University Medical Center Institutional Review Board, the Duke Comprehensive Cancer Center Protocol Review Committee, and the Durham VA Institutional Review Board.

Measures

Attachment was measured using a modified version of the Experiences in Close Relationships questionnaire [14]. The original questionnaire consists of 36 items assessing two dimensions of attachment, avoidance, and anxiety. The questionnaire used in the current study was modified by omitting items that referred to the loss of the spouse or relationship (e.g., "I'm afraid that I will lose my partner's love"; "I do not often worry about being abandoned"). Because participants in this study were dealing with a life-threatening medical illness in either themselves or their spouse, the threat of this loss was very real and we felt that participants may be unduly upset by being asked these questions and/or respond to them much differently than would participants who were not facing a life-threatening illness. The resulting questionnaire consisted of 22 items. Cronbach's alphas were 0.86 for patient anxiety, 0.87 for patient avoidance, 0.88 for spouse anxiety, and 0.86 for spouse avoidance. Examples of items in each scale are: "I wanted to get close to my partner, but I kept pulling back" (avoidance) and "When my partner disapproved of me, I felt really bad about myself (anxiety).

Patient measures

Quality of life (QOL) was measured using the physical well-being ($\alpha=0.87$), functional well-being ($\alpha=0.87$), and social well-being ($\alpha=0.75$) subscales of Functional Assessment of Cancer Therapy (FACT) [15]. The FACT is widely used in cancer studies and has been shown to possess adequate psychometric properties [15, 16].

Pain was assessed using two items from the Brief Pain Inventory (BPI) [17] in which participants rate their usual and worst pain in the past week. The worst and usual BPI pain intensity ratings have demonstrated good reliability and validity [18]. Because the ratings of usual and worst pain were highly correlated ($r=0.90$), they were combined into a single summary score.

Depressive symptoms were assessed using the Beck Depression Inventory (BDI; $\alpha=0.86$). The BDI has high internal consistency and good discriminant, construct, and concurrent validity [19].

Anxiety was measured using the trait anxiety version of the State Trait Anxiety Inventory ($\alpha=0.90$) [20]. The trait scale has demonstrated good reliability and validity [20].

Marital quality was measured using the Quality of Marriage Index (QMI; $\alpha=0.97$). The QMI has demonstrated good reliability and validity, correlating highly with longer, well-validated measures of marital adjustment [21, 22].

Self-efficacy was assessed with a modified version of a standard self-efficacy scale ($\alpha=0.94$) [23]. Patients rated their perceived ability to manage a variety of symptoms on a scale of 10 (not at all certain) to 100 (completely certain). Prior studies using this instrument with cancer patients and caregivers have demonstrated evidence of internal consistency and construct validity [24–26].

Spouse measures

Mood was assessed using a brief version of the Profile of Mood States-B (POMS-B) [27] consisting of 18 adjectives used to rate average mood. The POMS-B has six subscales: tension/anxiety depression, anger/hostility, vigor, fatigue, and confusion.

Caregiver strain was assessed with the Caregiver Strain Index [28], a 13-item scale with high internal consistency [28, 29] that assesses a variety of stressors commonly experienced by caregivers ($\alpha=0.84$).

Marital quality Spouses completed the QMI ($\alpha=0.96$) [21], described above.

Self-efficacy Spouses completed the caregiver version of the self-efficacy scale described above ($\alpha=0.96$), which is identical to the patient version, except that caregivers rate their confidence that they can help the patient manage symptoms.

Results

Data analyses

T tests, correlations, and one-way ANOVAs were used to examine relationships between patient and spouse attachment and demographic and disease variables. Regression analyses were used to examine the hypothesized associations between patient and spouse attachment and outcome variables (patients: marital quality, self-efficacy, depression, anxiety, pain, and QOL; spouses: marital quality, self-efficacy, caregiver strain, and mood). For analyses of patient outcomes, patient demographic and medical variables were entered first as covariates, patient anxious attachment and avoidant attachment were entered in the second step, and spouse anxious attachment and avoidant attachment were entered in the third step. For analyses of spouse outcomes, spouse demographic and patient medical variables were entered first, followed by spouse anxious and avoidant attachment, and then patient anxious and avoidant attachment.

To examine *dyad* attachment styles, patients and spouses were first classified as high or low in anxiety and avoidance. Because the median scores on the anxious and avoidance subscales were on the lower end of the range, the sample was split based on the upper quartile of scores. Individuals who scored in the top 25% of either anxiety or avoidance were labeled insecure. Dyads were grouped into one of four categories: (a) both patient and spouse are secure ($n=56$); (b) both patient and spouse are insecure ($n=22$); (c) the patient is secure and the spouse is insecure ($n=23$); and (d) the patient is insecure and the spouse is secure ($n=27$). Regression analyses were then used to predict patient and spouse adjustment from the dyad attachment category, controlling for demographic and medical variables.

Descriptive analyses

Analyses were performed to determine whether patients' attachment scores were related to any demographic or medical variables. There were two significant associations: Age was significantly correlated with anxious attachment, with older patients reporting lower levels of anxious attachment ($r=-0.19$, $p=0.03$). Also, patients who were undergoing chemotherapy ($n=20$) reported higher levels of avoidant attachment than patients who were not [$t(126)=$

−2.12, $p=0.04$]. There were no significant associations between spouses' attachment scores and demographic or medical variables.

In order to examine associations between attachment and measures of patient and caregiver adjustment independent of demographic and medical variables, the following analyses controlled for age, gender, education, cancer stage, time since diagnosis, and treatment with chemotherapy and radiation. Descriptive information on all study variables is presented in Table 1.

Patient adjustment

Table 2 presents the results of regression analyses predicting measures of patient adjustment from patient and spouse anxious and avoidant attachment. Results indicated that patients high in avoidant attachment reported much lower levels of marital quality and QOL in the functional and social domains and much higher levels of depressive symptoms and trait anxiety. Patients high in anxious attachment reported significantly higher levels of trait anxiety and significantly lower levels of social well-being. In addition, after controlling for patient anxious and avoidant attachment, spouse avoidant attachment was significantly associated with patient reports of pain and functional well-being, and spouse anxious attachment was associated with patient marital quality. Patients married to spouses high in attachment avoidance reported higher levels of pain and lower function well-being, and those married to spouses with higher attachment anxiety reported poorer marital quality.

Spouse adjustment

Table 2 presents the results of regression analyses predicting measures of spouse adjustment. The results of these analyses indicated that spouses high in avoidant attachment reported significantly lower levels of marital quality and higher levels of caregiver strain, anger, and depression. Spouses high in anxious attachment reported significantly higher levels of anxiety. There were no significant associations between patient attachment and spouse adjustment.

Dyad attachment

Regression analyses were used to predict patient and spouse adjustment from the dyad attachment category after controlling for demographic and medical variables. For the analyses of patient adjustment, results indicated that the dyad attachment groups differed significantly on self-efficacy [$F(3, 125)=03.41$, $p=0.02$], marital quality [$F(3, 125)=9.56$, $p<0.0001$], depression [$F(3, 125)=3.86$, $p=0.01$], anxiety [$F(3, 125)=05.11$, $p=0.002$], functional well-being [$F(3, 125)=4.17$, $p=0.008$], social well-being [$F(3, 125)=10.43$, $p<0.0001$], and pain [$F(3, 125)=4.34$, $p=0.006$]. For the analyses of spouse adjustment, the dyad attachment groups differed significantly on marital quality [$F(3, 125)=16.33$, $p<0.0001$], anger [$F(3, 125)=7.04$, $p=0.0002$], vigor [$F(3, 125)=03.21$, $p=0.03$], and caregiver strain [$F(3, 125)=3.50$, $p=0.02$].

For overall analyses that were significant, post hoc tests were conducted to test differences between the four dyad categories. To balance concerns of avoiding type 1 error while detecting potentially important relationships, alpha was set at 0.01 for these analyses. Least square means for the dyad attachment categories are presented in Table 3. The overall pattern of findings indicated that patients and spouses in dyads in which both partners were secure reported significantly better adjustment than patients/spouses in dyads in which both partners were insecure. The means in dyads in which one partner was secure and one insecure generally fell in between those of the secure and insecure groups. However, in some cases, such as patient self-efficacy and spouse vigor, the means for the dyads in which one partner was insecure were similar to those in which both partners were insecure.

Discussion

Attachment theory has been described as one of the most powerful theories to integrate the wide variety of coping concepts [30] and has obvious implications for the giving and receiving of care in the context of a life-threatening and often chronic medical condition such as cancer. Several recent studies have provided preliminary evidence that insecure attachment is associated with poorer functioning in both cancer patients and their caregivers [7, 10–12]. However, these studies have been limited by their focus on a narrow set of measures of adjustment and by their failure to consider of the attachment styles of both members of the dyad simultaneously. The results from the current study suggest that, among lung cancer patients and their spouses, insecure attachment was associated with poorer functioning in multiple domains. In addition, there were significant associations between spouse attachment styles and patient adjustment in important domains including pain and functional well-being. Examination of dyad attachment styles indicated that, for both patients and spouses, being in a dyad in which both partners were insecure was associated with significantly poorer adjustment.

Among patients, those with a more avoidant attachment style reported much poorer functional and social well-being, lower marital quality, and more severe symptoms of anxiety and depression. Anxious patients reported higher levels of anxiety and poorer social well-being. These findings are consistent with previous findings in studies conducted with patients with cancer [7, 12] and other medical conditions such as chronic pain [31–33] and diabetes [8]. Together, these findings support hypotheses derived from attachment theory that individuals with insecure attachment report increased levels of distress and poorer coping with medical illness. Interestingly, in the current study, avoidant attachment appeared more detrimental than anxious attachment. It is possible that the timeframe in which the assessments were conducted (an average of 20 months post-diagnosis) influenced these relationships. It may be that anxious patients are more distressed around the time of diagnosis but able to gradually adapt over time. In contrast, avoidant patients may find it increasingly difficult to adjust to persistent symptoms and physical limitations.

Among spouses, those with an avoidant attachment style reported higher levels of angry and depressed mood, more marital distress, and more caregiver strain, while anxious attachment was unassociated with measures of adjustment. These findings are consistent with previous studies indicating that insecure attachment among cancer caregivers is associated with increased distress [10–12] and with the broader literature on attachment which suggests that avoidant individuals are likely to have difficulty being in a caregiver role [9]. The lack of significant associations between spouse anxious attachment and adjustment is somewhat surprising given that attachment theory and experimental studies suggest that anxiously attached caregivers are likely to experience more distress [9]. One prior study of informal cancer caregivers found that attachment anxiety was associated with higher levels of depressive symptoms and caregiver strain, while avoidance was unrelated to caregiver adjustment [10]. However, that study was conducted with caregivers of patients who were diagnosed in the prior 6 months. As with patients, it may be that anxious attachment is related to increased caregiver distress closer to the time of diagnosis.

One of the strengths of this study was our examination of both patient and spouse attachment simultaneously. There was evidence suggesting that patients were impacted by the attachment style of their spouse. Specifically, patients married to spouses high in avoidant attachment reported higher levels of pain and lower functional well-being, and those married to spouses high in anxious attachment reported lower marital quality. In addition, findings from exploratory analyses of dyad attachment styles indicated that patients and spouses in dyads in which both partners were secure reported significantly

better adjustment than patients/spouses in dyads in which both partners were insecure. For many outcomes, dyads in which one partner was securely attached had similar levels of adjustment as those in which both were secure, suggesting that patients/spouses who are themselves insecure may be able to adapt successfully if they are married to a partner who is securely attached. However, for other outcomes, such as patient self-efficacy and spouse vigor, dyads in which only one partner was secure looked similar to those in which both partners were insecure. While preliminary, these findings suggest that it may be important to consider the attachment styles of dyads as well as of individual patients and caregivers. Future studies with larger sample sizes may want to examine particular mismatches in dyad attachment, such as an anxious patient married to an avoidant spouse, which may be associated with heightened distress and difficulty coping [34].

This study has a number of limitations. First, the sample was primarily older, white, and well educated. While we found little evidence that attachment style was associated with disease or demographic variables, the findings of the present study may not generalize beyond this sample. Additional studies with larger, more ethnically diverse samples and with patients with other types of medical illnesses are warranted. Second, the study design was correlational. Longitudinal research in which multiple measures of attachment and adjustment are taken at various time points throughout the illness trajectory would enable one to determine more definitely the nature of associations between attachment style and patient and spouse outcomes. Longitudinal studies would also increase understanding of how attachment styles may impact adjustment over the various phases of the disease (e.g., diagnosis, active treatment, survivorship, recurrence, end of life). Third, this study relied on self-report questionnaires of adjustment. Future studies should consider including measures such as health care use and treatment compliance to more fully understand the potential impact of attachment style on adjustment to cancer.

Should the findings from this study prove robust, they have a number of potential clinical implications. First, insecure patients may have difficulty coping with the stressors and symptoms of their illness, and thus, clinicians should consider assessing attachment style and referring patients and/or couples for psychosocial interventions. One intervention that may be effective is emotionally focused couples therapy [35, 36], an empirically validated couple therapy that is based on attachment theory and that may be particularly helpful for insecure patients and caregivers. Coping skills training interventions may also be helpful for couples to help them work together to approach cancer-related challenges [13]. Alternatively, if spouses are unwilling to participate in therapy, individual interventions to bolster patients' resources for coping and/or support may also be beneficial. Moreover, health care providers should be sensitive to attachment-related needs and motives and tailor their interactions with the patient to the patient's attachment style [33, 37].

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Table 1

Means, standard deviations, and ranges on study variables

	Patients	Spouses
	Mean (SD), range	Mean (SD), range
Attachment avoidance	2.17 (1.10), 1.0–5.73	2.18 (1.10), 1.0–6.36
Attachment anxiety	2.43 (1.25), 1.0–6.45	2.55 (1.30), 1.0–5.18
Marital quality	9.34 (1.26), 2.5–10.0	9.28 (1.27), 3.17–10.0
Self-efficacy	63.92 (19.01), 21.88–98.12	64.53 (19.13), 16.25–100.00
Depression	9.68 (7.12), 0–46.0	–
Anxiety	36.21 (10.42), 20.0–73.0	–
Pain	2.72 (2.46), 1.0–10.0	–
Physical well-being ^a	21.20 (5.69), 0–28.0	–
Functional well-being ^a	18.53 (6.62), 4.0–28.0	–
Social well-being ^a	24.29 (3.96), 11.67–28.0	–
Caregiver strain	–	4.88 (3.36), 0–12.0
Anger ^b	–	2.99 (3.43), 0–13.0
Confusion ^b	–	9.17 (3.49), 4.0–21.0
Fatigue ^b	–	5.76 (5.07), 0–19.0
Depression ^b	–	2.98 (3.58), 0–18.0
Anxiety ^b	–	4.46 (4.37), 0–18.0
Vigor ^b	–	10.46 (4.57), 0–20.0

^aQuality of life subscales^bProfile of mood states subscales

Table 2
Summary of regression analyses predicting patient and spouse outcomes from patient and spouse avoidant and anxious attachment

	Patient avoidant attachment			Patient anxious attachment			Spouse avoidant attachment			Spouse anxious attachment		
	B	Standard error	t	B	Standard error	t	B	Standard error	t	B	Standard error	t
Patient outcomes												
Marital quality	-0.55	0.11	-4.99****	-0.07	0.09	-0.71	0.01	0.10	0.07	-0.19	0.10	-1.99**
Self-efficacy	-1.88	1.88	-1.00	-1.82	1.61	-1.13	-3.10	1.75	-1.77	0.11	1.64	0.07
Depression	2.23	0.71	3.17***	0.92	0.61	1.53	1.03	0.66	1.56	-1.06	0.62	-1.72*
Anxiety	2.36	0.93	2.53***	2.64	0.80	3.29****	0.88	0.87	1.01	0.04	0.82	0.05
Pain	0.25	0.23	1.10	0.13	0.20	0.64	0.74	0.21	3.47****	-0.38	0.20	-1.88*
Physical well-being ^a	-0.87	0.57	-1.51	-0.36	0.49	-0.72	-0.83	0.53	-1.55	0.68	0.50	1.36
Functional well-being ^a	-1.73	0.65	-2.67***	-0.29	0.56	-0.53	-1.66	0.60	-2.74***	0.84	0.057	1.48
Social well-being ^a	-1.11	0.38	-2.96***	-0.92	0.32	-2.87***	-0.20	0.35	-0.56	-0.09	0.33	-0.26
Spouse outcomes												
Marital quality	-0.15	0.11	-1.42	-0.16	0.09	-1.91 ⁺	-0.64	0.10	-6.71****	-0.03	0.10	-0.31
Self-efficacy	-2.67	2.09	-1.28	-1.16	1.69	-0.69	-1.52	1.88	-0.81	-1.19	1.77	-0.67
Caregiver strain	0.01	0.32	0.05	-0.24	0.26	-0.93	0.68	0.28	2.40**	0.31	0.29	1.14
Anger ^b	-0.42	0.36	-1.15	0.21	0.29	0.72	0.89	0.33	2.74***	0.50	0.31	1.63
Confusion ^b	0.22	0.40	0.53	-0.17	0.32	-0.52	0.17	0.36	0.46	0.25	0.34	0.74
Fatigue ^b	0.29	0.58	0.51	-0.61	0.47	-1.31	-0.09	0.52	-0.18	0.42	0.49	0.85
Depression ^b	0.00	0.38	0.00	0.044	0.31	1.45	0.67	0.34	1.97**	0.32	0.32	1.02
Anxiety ^b	0.47	0.47	1.00	-0.12	0.38	-0.32	0.12	0.42	0.29	0.74	0.40	1.85*
Vigor ^b	-0.31	0.49	-0.63	-0.30	0.40	-0.76	-0.58	0.44	-1.31	-0.10	0.42	-0.24

B unstandardized regression coefficient

* $p < 0.10$,

** $p < 0.05$,

*** $p < 0.01$,

**** $p < 0.001$.

 $p<0.0001$
^a Quality of life subscales
^b Profile of mood state subscales

Table 3

Least square means for dyad attachment categories

	Both secure (<i>n</i> =56)	Patient secure–spouse insecure (<i>n</i> =23)	Patient insecure–spouse secure (<i>n</i> =27)	Both insecure (<i>n</i> =22)
Patient outcomes				
Marital quality	9.92a	9.82a	9.22a	8.30b
Self-efficacy	62.21a	51.51ab	50.70b	51.44ab
Depression	8.74a	10.81ab	12.76ab	14.76b
Anxiety	31.60a	33.71ab	40.17b	40.68b
Pain	1.82a	2.45ab	2.72ab	3.96b
Functional well-being ^a	20.04a	17.25ab	15.70b	14.88b
Social well-being ^a	26.03a	25.02ab	22.47bc	21.13c
Spouse outcomes				
Marital quality	10.49a	9.71b	10.14ab	8.40c
Anger ^b	1.62a	3.92b	1.18a	4.90b
Vigor ^b	10.89a	8.22ab	8.06b	8.34ab
Caregiver strain	5.79a	7.81b	6.60ab	7.95b

Means with different letters differ significantly from each other at $p<0.01$ ^aQuality of life subscales^bProfile of mood state subscales