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## The Lasting Impact of the Therapeutic Alliance: Patient-Oncologist Alliance as a Predictor of Caregiver Bereavement Adjustment

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### Abstract

**Background**—Caregivers of patients with advanced cancer provide extensive care and experience high levels of psychosocial distress. The patient-oncologist therapeutic alliance may be a modifiable factor that can prevent or reduce negative caregiver outcomes.

**Methods**—Coping with Cancer (CwC) was a prospective, longitudinal, multisite cohort study of terminally ill cancer patients (life expectancy < 6 months) and their informal caregivers followed into bereavement (n=68). Trained raters interviewed patients and caregivers upon study entry and caregivers six months after the patient's death. Patients answered quantitative questions assessing their perception of the patient-oncologist therapeutic alliance (The Human Connection Scale) and caregivers completed a measure of health-related quality-of-life (Medical Outcomes Study Short Form-36). Interviewers rated caregivers' level of emotional well-being. Associations between therapeutic alliance and caregiver outcomes were analyzed using univariate Analysis of Variance and logistic regression analyses, controlling for baseline caregiver measures and confounding sample characteristics.

**Results**—A strong patient-oncologist therapeutic alliance was bivariately associated with caregiver self-report of less role limitation due to emotional problems, better social function and mental and general health-related quality-of-life, and better interviewer-rated emotional well-being post-loss. After controlling for baseline measures and confounding sample characteristics, the relationship between patient-perceived therapeutic alliance and bereaved caregivers' mental health and interviewer ratings of bereaved caregivers' emotional well-being remained significant.

**Conclusions**—The influence of the patient-oncologist alliance may generalize beyond the patient to positively impact the caregiver. By developing a strong relationship with the patient, the oncologist may benefit the caregiver and the patient. This caregiver benefit may extend into bereavement.

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## Keywords

Caregivers; Physician-patient relationship; Bereavement; Mental health; Neoplasms

Caregivers of patients with cancer provide extensive care<sup>1</sup> and experience high levels of psychosocial distress,<sup>2</sup> especially in the context of advanced disease.<sup>3</sup> This distress often remains following the death of the patient. Bereaved caregivers are at risk for significant psychological distress<sup>4</sup> in the form of prolonged grief,<sup>5-7</sup> depression,<sup>6,8,9</sup> anxiety,<sup>8,9</sup> and posttraumatic stress disorder.<sup>10</sup> This distress is associated with problematic outcomes including poor quality-of-life,<sup>5,8,11</sup> suicidal ideation,<sup>9,12</sup> and sleep problems.<sup>8</sup> Bereaved caregivers are also at risk for high blood pressure, myocardial infarction, and cancer.<sup>9,13</sup> Identifying modifiable psychosocial factors to prevent or reduce caregiver distress and dysfunction may improve caregiver bereavement adjustment and reduce the risk for these negative outcomes.

The therapeutic alliance, or the personal bond and shared therapeutic goals<sup>14</sup> between a patient and medical provider, may be one such modifiable factor. A strong therapeutic alliance between the patient and oncologist is characterized by shared goals, mutual understanding, caring, trust, respect, acknowledgment of the personhood of the patient, and provider honesty and competency.<sup>15,16,17-19</sup> The alliance has been called the “cornerstone of medicine”<sup>20, p. 1594</sup> and one of the core components of patient-centered medical care.<sup>14,21,22</sup> In a 2007 report of the National Cancer Institute, patient-provider relationships “characterized by trust and rapport” (p. 18) were one of the six core functions of effective patient-provider communication.<sup>23</sup>

Research on the alliance between patients and medical providers indicates that a stronger patient-provider alliance is associated with better patient quality-of-life, higher patient satisfaction with treatment, greater perceived utility of treatment in patients, and lower rates of malpractice litigation.<sup>24-28</sup> In advanced cancer patients, a stronger patient-oncologist alliance is associated with better quality-of-life and greater illness acceptance; it has also been shown to predict a lower likelihood of receiving care in the ICU during the patient's last week of life.<sup>16</sup> Other analyses have shown that a strong patient-oncologist bond is associated with significantly higher rates of treatment adherence and lower risk of patient suicidal ideation and is more protective against suicidal ideation than support from other health professionals (e.g., mental health care providers, pastoral care) or other forms of psychotherapeutic or pharmacologic intervention (psychotherapy, antidepressants, analgesics).<sup>29</sup> In prospective analyses, the patient-oncologist alliance four months before death was one of the top nine predictors of quality-of-life in the last week of life.<sup>30</sup>

Thus, a growing body of research indicates that a strong therapeutic alliance between the cancer patient and oncologist is associated with positive patient outcomes, including less patient distress. Patient mental health has been shown to be associated with caregiver mental health.<sup>31</sup> Further, patient-oncologist therapeutic alliance<sup>31</sup> is associated with better patient quality-of-life near death which, in turn, predicts better bereavement adjustment.<sup>32</sup> In light of these relationships, we would expect a strong therapeutic alliance between the patient and oncologist to predict better caregiver bereavement adjustment. We hypothesize that a

stronger therapeutic alliance between the patient and oncologist at our baseline assessment will predict better bereaved caregiver health-related quality-of-life and emotional well-being six months following the patient's death.

## Methods

### Participants and Procedures

Coping with Cancer (CwC) is a National Cancer Institute and National Institute of Mental Health-funded prospective, longitudinal, multi-site study of terminally-ill cancer patients and their informal caregivers. CwC aimed to examine psychosocial factors that influence the care of advanced cancer patients and their caregivers' bereavement adjustment using quantitative measures. The current analyses examine the impact of the patient-oncologist therapeutic alliance (psychosocial factor) on caregiver bereavement outcomes, consistent with the primary aim of CwC. Patients were recruited from September 1, 2002 to February 28, 2008 from the Yale Cancer Center (New Haven, CT), Veterans Affairs Connecticut Healthcare System Comprehensive Cancer Clinics (West Haven, CT), Simmons Comprehensive Cancer Center (Dallas, TX), Parkland Hospital Palliative Care Service (Dallas, TX), Dana-Farber Cancer Institute (Boston, MA), Massachusetts General Hospital (Boston, MA), and New Hampshire Oncology-Hematology (NHOH). Participants included in the current analyses were recruited from the Yale Cancer Center, Simmons Comprehensive Cancer Center, Parkland Hospital Palliative Care Service, and New Hampshire Oncology-Hematology. Approval was obtained from the human subjects committees of all participating centers; all enrolled patients provided written consent and received \$25 for their participation.

Participants were recruited from outpatient clinics. Eligibility criteria included diagnosis of advanced cancer (presence of distant metastases, disease refractory to first-line chemotherapy, and a clinician's estimate that the patient would live 6 months or less). Additional inclusion criteria included patient age of 20 years or older, presence of an informal caregiver, absence of significant cognitive impairment in the patient and caregiver, and English or Spanish proficiency. Eligible caregivers were the persons whom patients identified as providing the majority of their unpaid care. After obtaining informed consent, patients' medical records and clinicians were consulted to confirm eligibility. Each enrolled patient and caregiver completed a baseline face-to-face interview. The patient interview included forced-choice questions assessing the patient's perception of the patient-oncologist therapeutic alliance and the caregiver interview included quantitative measures of bereavement adjustment. To reduce bias and enhance data quality, the interview was administered by trained research staff to probe for forced-choice responses to the interview questions. Patients and caregivers were interviewed separately at baseline. Caregivers were interviewed again a median of 6.28 months following the patient's death (post-loss). All interviews were conducted in English or Spanish.

### Measures

**Sample Background Characteristics**—Demographic characteristics of patients and caregivers were assessed at baseline based on self-report. Caregiver demographic

characteristics included age, gender, race, marital status, education, relationship to the patient, and whether the caregiver lived with the patient. Patient demographic characteristics included age, gender, and race.

**Health-related quality-of-life**—The Medical Outcomes Study Short Form 36 (SF-36) was used to assess caregivers' health-related quality-of-life (HRQOL). The SF-36 is a 36-item measure and consists of 8 subscales: physical functioning, role limitations due to physical health problems, role limitations due to emotional problems, pain, vitality, social functioning, mental health, and general health (Cronbach's alpha range = .69-.94). All items were linearly transformed to a 0 to 100 scale with higher scores indicating better HRQOL.<sup>33</sup> The SF-36 has adequate reliability and validity,<sup>33,34</sup> including among caregivers of patients with advanced cancer.<sup>35,36</sup> The measure was administered to caregivers at baseline and post-loss.

**Emotional well-being – Interviewer rating**—At the completion of the baseline and post-loss interviews, interviewers rated the caregiver's level of emotional well-being from “very distressed (1) to “little or no distress” (4) based on caregivers' behavior over the course of the interview. This item provided an additional perspective on caregivers' well-being, in addition to self-reported HRQOL.

**Therapeutic alliance**—The Human Connection scale (THC) is a 16-item measure of the patients' perception of the alliance between the patient and oncologist (Cronbach's alpha=.90).<sup>16</sup> Patients respond to each item on a four-point scale with response categories relevant to question content. Item responses are summed to create a total score with higher scores indicating a stronger therapeutic alliance. Example items include “how much do you trust your doctor” and “to what extent do you think your doctor sees you as a whole person?” The THC has been validated in older<sup>16</sup> and younger<sup>29,37</sup> patients with advanced cancer. Due to a negative skew in this sample that violated normality assumptions of parametric statistical tests, the THC was dichotomized into the upper one-third and lower two-thirds of the sample based on the THC score, consistent with previous analyses using this measure.<sup>29</sup>

## Statistical Analyses

First, logistic regression analyses examined bivariate associations between the caregiver's background characteristics and the patient-oncologist therapeutic alliance. Second, we examined bivariate associations between the patient-oncologist therapeutic alliance and the caregiver's HRQOL and emotional well-being at post-loss with univariate Analysis of Variance (ANOVAs) for normally distributed post-loss variables. Skewed post-loss variables were dichotomized into no distress (1) and any level of distress (0). Logistic regression analyses were used to examine the relationship between therapeutic alliance and these dichotomized post-loss variables. Third, we examined associations between the patient-oncologist therapeutic alliance and the caregiver's HRQOL and emotional well-being at post-loss, controlling for caregiver baseline measures of the outcome and confounding caregiver background characteristics using ANOVAs for continuous post-loss variables and logistic regressions for dichotomized post-loss variables. Caregiver background characteristics significantly associated ( $p<.05$ ) with both the patient-oncologist therapeutic

alliance and caregivers' HRQOL or emotional well-being, respectively, at post-loss were considered confounding factors. A p-value of  $p < .05$  was used for all analyses and all tests were two-sided.

## Results

### Sample Characteristics

Of the 931 eligible patients, 726 patients (78.0%) participated in the baseline interview. The most common reasons for nonparticipation were not being interested ( $n=109$ ), caregiver declined ( $n=33$ ), and being too upset ( $n=23$ ). There were no differences between patient participants and nonparticipants, except that patient participants were more likely to be Hispanic than nonparticipants ( $\chi^2(1, N = 931) = 5.06, p = .025$ ).

For the present analysis, the sample included the 68 patient/caregiver dyads with complete data on all study measures. The difference in the number of patients who completed baseline interviews and dyads with complete data is the result of the Human Connection Scale (THC) being added late into data collection for the study; it was only administered to patients recruited during the final years of the study. The patients on whom we have data on the THC were less likely to die during the study observation period so their caregivers were also less likely to complete post-loss surveys. As a result, only a small proportion of the baseline sample had complete data on the THC and measures of caregiver bereavement adjustment. Caregivers with incomplete data on study measures were more likely to be the patient's spouse versus other relative ( $\chi^2(1, N = 597) = 4.29, p = .04$ ) and were younger ( $t(675) = -2.61, p = .009$ ) than caregivers with complete data on study measures. Patient interviews lasted 30-45 minutes; caregiver interviews lasted 60-75 minutes.

Caregiver characteristics are shown in Table 1. Caregivers were primarily white (80.6%) and female (76.5%). The average caregiver age was 54.04 years ( $SD=13.60$ ) and approximately half of caregivers were the spouse/partner of the patient (45.6%). Patients in the sample were predominately white (80.9%) and half were male (50.0%). Patients' average age was 63.73 years ( $SD=13.50$ ).

Associations of caregiver characteristics with therapeutic alliance are shown in Table 1. Recruitment site was associated with therapeutic alliance with patients recruited from northern sites reporting weaker therapeutic alliance (OR, .17 [95% CI, .05, .53],  $p = .002$ ). No additional significant relationships among caregiver characteristics and therapeutic alliance emerged. The interviewer rating of caregiver emotional well-being was significantly correlated with caregiver self-report of mental health-related quality-of-life at baseline (Pearson  $r(66) = .42, p < .001$ ) and post-loss (Pearson  $r(66) = .51, p < .001$ ) and was not associated with physical health-related quality-of-life at baseline (Pearson  $r(66) = -.02, p = .89$ ) or post-loss (Pearson  $r(66) = .09, p = .47$ ). These relationships support the convergent and discriminant validity of the interviewer rating of caregiver emotional well-being.

### Therapeutic Alliance and Caregiver Health-Related Quality-of-life

In unadjusted analyses (Table 2), a strong patient-oncologist therapeutic alliance at baseline was significantly associated with better mental health ( $F(1, 66) = 7.39, p = .01$ ) and general

health-related quality-of-life ( $F(1, 66)=7.30, p=.01$ ). A strong patient-oncologist alliance was also associated with less role limitation due to emotional problems (OR, 5.43 [95% CI, 1.59, 18.52],  $p=.01$ ) and better social function (OR, .3.83 [1.33, 11.02],  $p=.01$ ). After controlling for caregiver baseline health-related quality-of-life and confounding factors (Table 3), a strong patient-oncologist therapeutic alliance at baseline remained a significant predictor of better caregiver mental health ( $F(1, 65)=7.97, p=.01$ ) at post-loss.

### Therapeutic Alliance and Caregiver Emotional Well-being

A strong patient-oncologist therapeutic alliance was associated with better caregiver emotional well-being at post-loss using an interviewer rating (OR, 5.67 [1.85, 17.34],  $p=.002$ ; Table 2). After controlling for baseline emotional well-being and confounding factors, a strong therapeutic alliance remained a significant predictor of better well-being at post-loss (OR, 5.87 [1.52, 22.70]; Table 3).

### Discussion

To the best of our knowledge, this study is among the first to examine the relationship between the patient-oncologist therapeutic alliance and caregiver bereavement adjustment. The results indicate that the patient's perception of a strong therapeutic alliance with the oncologist before death predicts better social function, mental and general health-related quality-of-life, and interviewer-rated emotional well-being and less role limitation due to emotional problems in caregivers six months after the patient's death. Further, the relationship between therapeutic alliance and mental-health related quality-of-life and interviewer-rated emotional well-being remained significant after controlling for baseline levels of these variables and confounding caregiver demographic characteristics.

Two aspects of these results demonstrate the power and importance of the patient-oncologist therapeutic alliance. First, therapeutic alliance in this study was the patient's perception of the quality of his/her relationship with the oncologist. These findings suggest that the influence of the patient-oncologist alliance may extend beyond the patient to impact the caregiver. The patient is typically the focus of the clinical encounter; caregivers report receiving less support from healthcare providers than patients.<sup>38,39</sup> Yet, caregivers report similar,<sup>40,41</sup> if not more severe,<sup>42</sup> distress as patients. Limited time and oncologist workload may preclude development of a strong oncologist-caregiver alliance. Developing a strong therapeutic alliance with the patient may be a highly effective use of clinical time due to the impact on both patients<sup>16,29,37</sup> and caregivers.

Second, the patient-oncologist therapeutic alliance predicted caregiver well-being and bereavement adjustment after the patient's death. This lasting effect of the therapeutic alliance, even in the patient's absence, suggests that the oncologist's alliance with the patient has a strong and enduring influence on caregiver well-being. Providing support to caregivers post-loss is often not possible for oncologists.<sup>39</sup> By developing a strong therapeutic alliance with the patient, the oncologist may positively influence distressed caregivers, even into bereavement.

Future research is needed to identify the mechanisms through which the patient-oncologist alliance impacts caregiver bereavement adjustment. For example, oncologists who form stronger patient relationships may also show more concern for caregivers, promoting caregiver adjustment. A strong patient-oncologist alliance may also lead to fewer feelings of abandonment in caregivers, resulting in better bereavement adjustment.

Research has also not extensively examined the caregiver-oncologist therapeutic alliance or the caregiver's perception of the patient-oncologist alliance. In a study of caregivers of patients with advanced cancer, the quality of the caregiver's relationship with the patient's healthcare providers was associated with less caregiver burden.<sup>43</sup> However, relationship quality was assessed with a measure of family need fulfillment; fewer unmet needs was the indicator of a better quality relationship with the healthcare provider. Meeting patients' and caregivers' needs may be one component of a quality relationship but it does not capture the "personal bond between doctor and patient"<sup>14, p. 51</sup> that characterizes the therapeutic alliance. Additional research is needed to identify valid assessments of the caregiver-oncologist alliance and to examine the relationship between these measures and patient and caregiver outcomes. In addition, examination of the relative impact of the caregiver-oncologist alliance to the patient-oncologist alliance will provide guidance regarding effective foci of clinical care.

Similarly, research is needed to explore the influence of the oncologist's perception of the therapeutic alliance with the patient and caregiver. The psychotherapy literature has demonstrated that it is the patient's perception of the alliance that matters for patient outcomes,<sup>44</sup> and this may prove the case for cancer patients' alliance with their oncologists. Nevertheless, until the oncologist's perceived alliance with patients is assessed and examined, we will not know whether it influences patient or caregiver outcomes.

Effective strategies for developing a strong therapeutic alliance, per se, have not been empirically examined. The quality of oncologist communication may be one factor influencing the therapeutic alliance. Better oncologist communication has been associated with positive patient outcomes including greater satisfaction with care, less patient distress, better health-related quality-of-life, greater enrollment in clinical trials, and better treatment adherence.<sup>45-48</sup> Research on the relationship between oncologist communication and caregiver outcomes is more limited. In cross-sectional analyses, caregiver dissatisfaction with provider communication was associated with perceived unmet informational needs.<sup>49</sup> However, the causal relationship between and potential underlying mechanisms of this relationship were not explored.

Oncologist communication skills may not be the only important factor in developing a strong therapeutic alliance. Other components of the therapeutic alliance that may influence caregiver outcomes include patient trust and confidence in the oncologist, patients' perception of being valued and cared for by the oncologist, and oncologist expressions of empathy and compassion.<sup>15,45,47,50,51</sup> Identification of the components of therapeutic alliance associated with caregiver outcomes and oncologist skills and behaviors that promote these components, such as strategies for expressing compassion and empathy will lead to specific and concrete recommendations for improving clinical care. This information will

also inform oncologist training resources that can be integrated with strategies for effective communication into medical student training and continuing education.

Improving providers' ability to build a strong alliance with patients will have limited impact if the delivery model and pay structure for patient care limit utilization of these skills. For example, patient appointments may occur in non-private spaces with frequent interruptions and in the context of significant time pressure, factors likely to interfere with the development of a strong therapeutic alliance.<sup>52</sup> Further, the current fee-for-service pay structure does not reimburse physicians for the time that may be required to build a strong therapeutic alliance. A study comparing salaried and fee-for-service Danish pediatricians found that salaried physicians spent more time providing information and advice and engaging in empathic behaviors, factors likely to promote the therapeutic alliance.<sup>53</sup> While the practice of pediatricians differs notably from that of medical oncologists, these findings suggest that reimbursement schedules may impact provider behavior in ways relevant to the therapeutic alliance.<sup>54</sup>

This study focused on the relationship between the patient and oncologist and did not assess the patient's relationship with other members of the medical team. Cancer care is a multi-disciplinary effort<sup>23,52</sup> and the patient's relationship with other team members may also impact patient and caregiver outcomes. Caregivers of patients who develop strong alliances with multiple medical team members may benefit more than caregivers of patients who only have a strong alliance with the oncologist. Alternatively, developing alliances with multiple members of the medical team may lead to fragmented and overall weaker relationships, reducing the positive impact of the patient-oncologist alliance.

This study is limited by a relatively small sample with too few minorities to enable a comparison by racial/ethnic group. Research suggests that particular aspects of the therapeutic alliance, such as trust, may be especially important to certain ethnic and minority groups.<sup>55</sup> Future research should examine differences in the nature of the therapeutic alliance across racial and ethnic groups and the relationship between therapeutic alliance and caregiver well-being in these populations. Further, in the current sample, approximately 45% of the sample was a spouse/partner of the patient. Future research should examine whether the patient-oncologist alliance influences a broader network of caregivers with non-spousal relationships to the patient. Limitations also exist in regards to measurement. There is the need to confirm the use of the upper-third of the THC distribution as a meaningful cut-point for partitioning the sample. In addition, the interviewer rating is a single item measure completed by one interviewer based on a specific context (i.e., a research interview). Multi-item measures completed by multiple observers across contexts would provide a more comprehensive observer assessment of caregiver emotional well-being. Finally, the mechanisms underlying the relationship between the patient-oncologist alliance and caregiver well-being are not examined in this study. For example, the patient-oncologist alliance may have a direct impact on caregiver well-being or may be mediated by patient distress. Larger scale studies are needed to examine these potential relationships.

In conclusion, this study demonstrates the enduring influence of patients' perceived therapeutic alliance with their oncologist on their surviving caregivers' bereavement



adjustment. It extends evidence of the positive outcomes of a strong therapeutic alliance in patients to patients' caregivers. In addition, the effects of the patient-oncologist alliance on caregivers lasted into the early months of bereavement, typically the most challenging period of adjustment. To the extent that the therapeutic bond with the patient helps ease the burden of grief-stricken caregivers, it may be an as yet unrealized way to improve bereavement outcomes. It may also highlight to oncologists just how far their relationships with their patients can reach.

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**Table 1**  
**Caregiver Background Characteristics and Patient-Oncologist Therapeutic Alliance at Baseline Assessment**

Caregiver Characteristic	All Participants: No. (%)	Patient TA: No. (%)		Association with Strong TA	
		Weak	Strong	OR [95% CI]	P
Total	68 (100)	45 (66.2)	23 (33.8)		
Sex					
Men	16 (23.5)	11 (24.4)	5 (21.7)	0.86 [0.26-2.86]	.80
Women	52 (76.5)	34 (75.6)	18 (78.3)		
Race <sup>a</sup>					
White	54 (80.6)	38 (86.4)	16 (69.6)	0.36 [0.11-1.24]	.11
African American or Hispanic	13 (19.4)	6 (13.7)	7 (30.4)		
Marital status					
Not married	16 (23.5)	10 (22.2)	6 (26.1)	1.24 [0.39-3.97]	.72
Married	52 (76.5)	35 (77.8)	17 (73.9)		
Relationship to patient <sup>b</sup>					
Spouse/partner	31 (45.6)	22 (48.9)	9 (39.1)	0.67 [0.24-1.87]	.45
Other	37 (54.4)	23 (51.1)	14 (60.9)		
Lives with patient					
Yes	48 (70.6)	32 (71.1)	16 (69.6)	0.93 [0.31-2.78]	.90
No	20 (29.4)	13 (28.9)	7 (30.4)		
Recruitment site <sup>c</sup>					
NHOH, Yale	49 (72.1)	38 (84.4)	11 (47.8)	0.17 [0.05-0.53]	.002
Simmons, Parkland	19 (27.9)	7 (15.6)	12 (52.2)		
		Patient TA: Mean ± SD		Association With Strong TA	
Caregiver Characteristic	All Participants: Mean ± SD	Weak	Strong	OR [95% CI]	P
Age, y	54.04 ± 13.60	52.40 ± 13.78	57.26 ± 12.92	1.03 [0.99-1.07]	.17
Education, y	14.46 ± 3.72	14.29 ± 4.03	14.78 ± 3.09	1.04 [0.90-1.19]	.60

Abbreviations: CI, confidence interval; NHOH, New Hampshire Oncology-Hematology; OR, odds ratio; SD, standard deviation; TA, therapeutic alliance.

<sup>a</sup>For caregiver race, n = 6 African American, n = 7 Hispanic, and n = 1 missing.

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<sup>b</sup>For caregiver's relationship to patient, n = 22 son/daughter; n = 5 parent, n = 7 other relative, and n = 3 friend/other.

<sup>c</sup>For treatment site, n = 48 at NHOH (Concord, NH), n = 1 at Yale Cancer Center (New Haven, Conn), n = 8 at Simmons Comprehensive Cancer Center (Dallas, Tex), and n = 11 at Parkland Hospital Palliative Care Service (Dallas, Tex).

**Table 2**  
**Bivariate Associations Between Patient-Oncologist Therapeutic Alliance and Caregiver Health-Related Quality of Life and Emotional Distress**

Caregiver Outcome After Patient Death	Mean ± SD	F	DF	P
Vitality		1.79	1, 66	.19
Weak TA	55.67 ± 16.77			
Strong TA	61.09 ± 13.73			
Pain		.05	1, 66	.83
Weak TA	72.94 ± 22.68			
Strong TA	74.24 ± 25.38			
Mental health		7.39	1, 66	.01
Weak TA	63.82 ± 17.60			
Strong TA	76.00 ± 17.23			
General health		7.30	1, 66	.01
Weak TA	55.00 ± 21.11			
Strong TA	69.57 ± 20.88			
Caregiver Outcome After Patient Death <sup>a</sup>	High QoL: No. (%) <sup>b</sup>	OR <sup>c</sup>	95% CI	P
Physical function		1.05	0.38-2.87	.93
Weak TA	21 (46.7)			
Strong TA	11 (47.8)			
Role-physical		2.19	0.69-6.97	.19
Weak TA	28 (62.2)			
Strong TA	18 (78.3)			
Role-emotional		5.43	1.59-18.52	.01
Weak TA	21 (46.7)			
Strong TA	19 (82.6)			
Social function		3.83	1.33-11.02	.01
Weak TA	13 (28.9)			
Strong TA	14 (60.9)			
Emotional well being: Interviewer rating		5.67	1.85-17.34	.002
Weak TA	15 (33.3)			
Strong TA	17 (73.9)			

Abbreviations: CI, confidence interval; DF, degrees of freedom; HRQoL, health-related quality of life; OR, odds ratio; SD, standard deviation; TA, therapeutic alliance.

<sup>a</sup>Role-physical indicates role limitations because of physical health problems; Role-emotional, role limitations because of emotional problems; TA was rated as weak (lower two-thirds) or strong (upper one-third).

<sup>b</sup>The percentage within each TA group is indicated.

<sup>c</sup>For logistic regression analyses, TA was rated as weak (0) or strong (1), and QoL was rated as low (0) or high (1).

**Table 3**  
**Adjusted Associations of the Relationship Between Patient-Oncologist Therapeutic Alliance and Caregiver Health-Related Quality of Life and Distress After Patient Death**

Caregiver Outcome After Patient Death (Time 2) <sup>a</sup>	<i>F</i>	DF	<i>P</i>
Mental health <sup>b</sup>	7.97	1, 65	.01
General health <sup>c</sup>	1.87	1, 64	.18
Caregiver Outcome After Patient Death (Time 2)	OR <sup>d</sup>	95% CI	<i>P</i>
Role-emotional <sup>e</sup>	3.59	0.94-13.73	.06
Social function <sup>f</sup>	2.92	0.91-9.39	.07
Emotional well being: Interviewer rating <sup>g</sup>	5.87	1.52-22.70	.01

Abbreviations: CI, confidence interval; DF, degrees of freedom; HRQoL, health-related quality of life; OR, odds ratio; time 2, postloss assessment.

<sup>a</sup>Therapeutic alliance (TA) was rated as weak (lower two-thirds) or strong (upper one-third).

<sup>b</sup>The analysis was controlled for mental health at the baseline assessment (time 1).

<sup>c</sup>The analysis was controlled for time 1 general health and recruitment site.

<sup>d</sup>For logistic regression analyses, TA was rated as weak (0) or strong (1), and quality of life was rated a low (0) or high (1).

<sup>e</sup>Role-emotional indicates role limitations because of emotional problems. The analysis was controlled for time 1 role-emotional.

<sup>f</sup>The analysis was controlled for time 1 social function and recruitment site.

<sup>g</sup>The analysis was controlled for time 1 interviewer rating of emotional well being and recruitment site.