

# Acceptability and Feasibility of a Meaning-Based Intervention for Patients With Advanced Cancer and Their Spouses: A Pilot Study

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## Abstract

**Background:** Constructing meaning in cancer leads to improved psychosocial outcomes for patients and survivors. **Aim:** We tested the feasibility and preliminary efficacy of a meaning-based intervention for couples. **Design:** The single-arm pilot study tested a 4-session, tailored, activities-based couple's intervention. **Setting/Participants:** Twelve adults with incurable cancer and their partners participated either in a university office or at the couple's home. **Results:** The study showed good feasibility. One of the two patients depressed at baseline was no longer depressed at postintervention. Patients' threat appraisals decreased and transcendence increased. In partners, depression, anxiety, and challenge appraisal decreased; threat and secondary appraisals and peace with illness increased. **Conclusions:** Our findings suggest feasibility and efficacy, and further research and continued evaluation of this intervention are warranted.

## Keywords

end of life, meaning-making intervention, couples focus, transcendental concerns, anxiety, depression

## Introduction

Cancer is a life-altering illness presenting unique challenges. Patients with advanced-stage cancer struggle with fears of disability, loss, and death and also report concerns regarding dependency, meaninglessness, hopelessness, burden to others, loss of social role function, and feeling emotionally irrelevant.<sup>1,2</sup> In addition, being confronted with death increases distress because of the existential threat that individuals experience when confronted with the possibility of ceasing to exist. Unfortunately, a failure to recognize and accept these concerns after a diagnosis of advanced cancer has been associated with psychological distress and poor adjustment, significantly increasing the risk of depression.<sup>3-5</sup> Indeed, rates of distress among patients with advanced cancer range from 5% to 40%,<sup>6</sup> and as patients approach death, they report more existential distress than psychological distress.<sup>6</sup>

The cancer experience also affects the loved ones of the patient. Most directly impacted is the partner, whom patients generally report as their primary source of caregiving support.<sup>7</sup> The transition to palliative care may be a particularly vulnerable time for loved ones. When describing the transition to end-of-life care, partners of patients with cancer report increasing concerns related to meaning making (especially as it relates to the couple's life together), anticipatory mourning, and finding hope.<sup>8</sup> Caregiving spouses report levels of distress equal to

and sometimes greater than those of the patient.<sup>9,10</sup> Nearly 40% of spouses of patients with advanced cancer have significant symptoms of depression,<sup>9</sup> and as the patient's functional status declines, caregiver depression and perceived burden significantly increase.<sup>11</sup>

More than 40% of patients with cancer report wanting help with overcoming fears, finding hope, and importantly, finding meaning in life.<sup>12</sup> Meaning refers to the value that patients attach to their lives,<sup>13</sup> it provides the framework for which life-altering events such as cancer are interpreted.<sup>14</sup> The construction of meaning does not occur in isolation, rather it is made within the contexts of relationships. For patients with cancer and their partners, constructing meaning may help them

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find some purpose in their cancer experience and may impact their psychological response to this life-threatening event.<sup>14</sup> In fact, prior research suggests that the ability to construct meaning is associated with improved psychosocial outcomes for patients, including increased self-esteem, greater optimism, and less psychological distress.<sup>15</sup>

The construction of meaning might serve as a buffer against distress partly because meaning helps alter appraisals. Cognitive appraisal is “the process through which people evaluate the meaning of a specific event with respect to its personal significance”<sup>16(p122)</sup> and might influence the way in which patients cope with stressful events such as cancer. A more positive cognitive appraisal has been associated with lower levels of distress among patients with cancer,<sup>17</sup> suggesting cognitive appraisals may be one of the mechanisms that mediate the relationship between meaning making and distress. The construction of meaning within the existential threat of death may lead to perceptions of transcendence, that is, understanding that physical death does not mean ceasing to exist in the hearts and lives of loved ones, that one may transcend death through one’s relationships.<sup>18</sup>

The growing recognition of the prevalence of these existential concerns, in addition to patients’ call for support as they search for meaning, has prompted researchers to develop more person-centered interventions incorporating spirituality, hope, and meaning making at the end of life. Meaning-based or meaning-making interventions are those which are designed to support patients as they search for and create a sense of meaning.<sup>19</sup> The goal of the intervention is to motivate patients to continue to engage in life through finding purpose in the actions, events, and circumstances of their life, even as death draws near.<sup>4</sup> The nature of the intervention implies that the search for and creation of meaning are both a process and an outcome of treatment.<sup>15</sup>

Interventions incorporating meaning making in individual and group end-of-life cancer care have reduced suffering and improved positive outcomes for patients. An individual, meaning-making intervention developed by Lee and colleagues<sup>15</sup> resulted in increased optimism, self-efficacy, and self-esteem compared to usual care. Moreover, Breitbart and colleagues<sup>20</sup> meaning-centered group psychotherapy demonstrated reductions in both anxiety and desire for hastened death in addition to increased meaning. The positive results of these studies indicate that meaning making is an important resource for coping with the emotional and existential suffering associated with death. However, most psychological interventions for advanced cancer are delivered in a group or individual format and neglect the shared experience, needs, and resources of patients and their partners.<sup>21</sup>

Only a sparse number of studies reported including both patients with advanced cancer and their partners in interventions. This is despite overwhelming evidence of the link between the well-being of patients and partners during end of life and repeated calls to develop interventions involving the couple.<sup>22-24</sup> McLean and colleagues<sup>25</sup> have conducted the most rigorously designed meaning-making intervention trial

for couples facing end-stage cancer to date. They enrolled 42 couples in a randomized trial comparing Emotionally-Focused Therapy (EFT), which has meaning enhancement as a theme, to standard care. At the end of the intervention, couples receiving EFT demonstrated large and significant improvements in marital functioning compared to couples receiving standard care, and these improvements were maintained through 3-month follow-up. In a smaller study,<sup>26</sup> 6 couples completed 8 sessions of couples therapy tailored to end-of-life concerns. The treatment focused on facilitating shifts in meaning; increasing intimacy, emotional support, and reciprocity; and facilitating conversations about death. There were significant decreases in patients’ distress about dying and the frequency of partners’ worry about their partner dying. Other studies reporting the effects of meaning-making interventions among couples during end of life have focused on improving communication in the couple<sup>27</sup> or symptom and family functioning.<sup>28,29</sup>

To date, no study has tested an intervention focused on meaning making with couples, assessed the impact it has on psychological distress *and* assessed process variables that may account for changes in distress.

## Study Aims

The aims of this single-arm pilot study were to test the feasibility and preliminary efficacy of a brief meaning-based intervention for patients and their partners. We assessed feasibility by calculating recruitment rates and intervention retention. We hypothesized that 50% of couples invited would participate in the study and that 70% of enrolled patients would complete all interventional sessions.

Intervention efficacy was evaluated in terms of pre- to post-changes in psychological outcomes, specifically anxiety and depression. We hypothesized decreases in depression and anxiety following intervention. As an exploratory aim, we also evaluated possible process variables, including meaning, transcendence, peace with illness, and appraisals. We assessed the impact of the intervention on these process variables as a preliminary step toward identifying the mechanisms by which meaning-based interventions may improve patient and partner psychological distress. We hypothesized improvements in each of the outcome and process variables proposed.

## Method

### Participants

Twelve couples in which the patient was diagnosed with stage IIB to IV lung (10 patients) or breast cancer (2 patients) participated in this study. In all, 10 couples were heterosexual and 2 couples were same-sex female couples, resulting in 8 female patients, 4 male patients, and 6 male and 6 female caregivers. See Table 1 for demographic and disease characteristics. One patient died following the second therapy session and was therefore excluded from analyses.

**Table I.** Demographic Characteristics.

	Patient (n = 11)	Spouse (n = 11)
Gender	7 Female 4 Male	6 Female 5 Male
Employment		
Employed	3	8
Retired	3	2
Disabled	5	1
Education		
HS	5	6
College	2	0
Postcollege	4	5
Age	M = 59.10 years Range (46-66 years)	M = 59.60 years Range (54-68 years)
Household income		
US\$10 000-		3
US\$50 000		
US\$50 001-		2
US\$70 000		
>US\$70 001		6
Spousal overall health		
Poor		1
Fair		1
Good		3
Very good		6
Length of relationship	M = 30.75 (SD = 36.79)	M = 30 years
Time since diagnosis	R = 3-115 months	Range (10.5-50.1 years)
Cancer stage		
IIB	1	
III	1	
IV	9	

Abbreviations: HS, high school; SD, standard deviation.

## Procedure

The study procedure was approved by the cancer center scientific review committee and university institutional review board to assure study significance and adherence to ethical treatment of human subjects. Eligible patients were at least 21 years of age; diagnosed with an incurable cancer; with a life expectancy of at least 6 months as determined by their oncologist; able to read, write, and understand English; not currently receiving psychological therapy or counseling as a couple; willing to have interventions audio recorded; and willing and able to complete the intervention with a partner. Given the focus of the intervention on end-of-life concerns, we recruited patients through oncologists instead of directly. Oncologists were asked to identify patients who met eligibility criteria and who they deemed would be amenable to and benefit from the intervention. They informed eligible patients about the study during a routine medical appointment; nurse researchers provided interested patients a study brochure and informed them that the principle investigator (PI) would call in 1 week to further explore their interests. The study was described to patients as a “supportive care intervention for advanced cancer patients and their partners.” The PI then called and enrolled participants who remained interested in the study.

Couples were provided the option to engage in the study either at the PI’s office or their home. Two licensed clinical psychologists with expertise in cancer care delivered the intervention. Couples were asked to participate in 4 interventional sessions and baseline and postintervention assessments. The baseline assessment was conducted by the PI for the first interview to identify any problems with the instruments or procedures, and by the interventionist for all other participants in order to enhance rapport building in this brief intervention. This procedure also enhanced convenience for the couple, by allowing couples to complete assessments and interventions at home, if they preferred, rather than coming to an office for an assessment. Postintervention assessments were conducted by the PI after the last session; at that time couples completed the survey instruments and then were interviewed by the PI regarding their experience with the intervention. Couples received US\$50 gift cards following both baseline and postintervention surveys. All sessions were attended by both the patient and their partner.

## Intervention

The intervention was grounded in existential psychotherapy and was designed to increase meaning in life and sense of transcendence, determine wishes and hopes, and help patients and their partners communicate more openly about death and dying. The goal was for patients to be able to discuss their fears with their partners present, as it was expected their partners would be their main source of support and the person who would carry out the patients’ final wishes. The intervention, developed by the research team, consisted of experiential activities drawn from clinical practice and extensive literature review of successful meaning-based interventions.<sup>4,15,20,30,31</sup>

The intervention consisted of four 60-minute sessions. The use of 4 sessions allowed enough time to address the 3 primary themes of the intervention, outlined subsequently, as well as limited the demand on patients with advanced disease and declining health. The goal was not to decrease existential threat, which may increase when confronted, but to face it within the safety of an intimate relationship and to develop a sense of control over the time leading to death, and of transcendence after death as a consequence of finding meaning. The 4 interventional sessions were activities based, which we expected would facilitate discussion of difficult end-of-life issues, and focused on 3 primary themes or modules including: (1) meaning in life, (2) hopes for the future, and (3) social connectedness. The initial meeting with the couple focused on assessment, and the psychologist conducted a brief semistructured interview to assess current and past history of mental health problems. A Life Review<sup>4</sup> was the focus of the first session, with each partner having the opportunity to recall and reflect upon life events together while gaining comfort with the therapist. Although observing the creation of the timeline, the interventionist gained more information about the couple’s history and observed how they relate, which became informative

in shaping future sessions. The session ended with informing the couple of the topic for session 2, focused on the future segment of the timeline. Each partner was provided homework worksheets to complete for the next session, which asked them to identify their future wishes.

In session 2, the therapist used homework review, empathic reflection, and open-ended questions to draw out sharing of each partner's values and wishes as end-of-life approaches. Couples completed the "Go Wish" card game developed by CODA Alliance,<sup>32</sup> which asks participants to sort and prioritize cards listing statements that people often cite as being important in the last weeks or months of life. Partners were provided meaning-making handouts for reflection and preparation for session 3.

Session 3 was partially based on an exercise performed in Breitbart and colleagues'<sup>20</sup> meaning-based group psychotherapy. Couples described moments in their life that felt particularly meaningful and reflected on how cancer affected their sense of meaning. Again, the interventionist used empathic reflection and open-ended follow-up questions to encourage open sharing of what makes life meaningful to each partner, leading to an inquiry about gaps that may exist related to living a life of vitality and meaning. Homework following this session included a brief excerpt from Yalom's<sup>33</sup> *Staring at the Sun* intended to stimulate reflection about circles of influence through relationships with others that add meaning and richness to life.

Session 4 focused on relationships. Each partner was provided the opportunity to share their experience of the homework reading as a segue to completing a relationship puzzle activity. The patient was then provided a blank puzzle representing their social life, with the center piece representing the patient. The patient was invited to assign names to the other puzzle pieces with those individuals who were important in shaping his or her life, both currently and in the past, and also to consider people they hoped to influence. Once the puzzle was completed, the couple was asked to reflect on the importance of these relationships and consider their values about communication with important people as the end-of-life approaches.

The interventionists were clinical health psychologists. One had extensive training and experience in oncology settings and end-of-life care; the other, who worked with the majority of the couples, was in postdoctoral licensure status and receiving supervision from the more experienced psychologist. Interventionists were provided a binder-containing descriptions of the purpose and goals of each session, instructions on completing experiential activities, and homework worksheets. Intervention-specific training also included self-study of the literature explicating the theories supporting the intervention.

## Measures

**Demographic and illness characteristics.** A project questionnaire was developed to measure demographic characteristics of the patient and spouse at baseline. Disease characteristics were also collected from the patient.

## Outcome Variables

**Anxiety and depression.** The *Hospital Anxiety and Depression scale* (HADS)<sup>34</sup> was administered to assess anxiety and depressive symptoms. This 14-item scale was developed for use in a medical population and excludes somatic symptoms. The HADS includes a 7-item depression subscale and a 7-item anxiety subscale. The HADS is the most extensively studied mood questionnaire in cancer<sup>35</sup> and palliative settings<sup>36</sup> and exhibits strong psychometric properties. A review of 71 articles examining psychometric properties of the HADS (many of which included cancer samples) reported strong internal consistency and concurrent validity in addition to strong sensitivity and specificity at the recommended cutoff score of 8.<sup>37</sup> A meta-analysis of the HADS in cancer and palliative settings also reported strong sensitivity and specificity as a screening tool.<sup>35</sup>

## Process Variables

**Meaning.** The Meaning/Peace subscale of the *Functional Assessment of Chronic Illness Therapy Spiritual Well-Being scale* (FACIT-Sp)<sup>38</sup> was also administered. Directions were modified to reflect the perspective of the individual completing the survey, with patient's instructions stating, "Below is a list of statements that other people with *your illness* have said are important." Partner instructions substituted *your illness* with *partners of patients with cancer*. This 8-item subscale assesses a sense of meaning, peace, and purpose in life and asks respondents to rate on a 5-point scale ranging from *not at all* (0) to *very much* (4). Scores range from 0 to 32 with higher scores indicating greater sense of meaning/peace. The scale was validated in a cancer population and demonstrated strong internal consistency (Cronbach  $\alpha = .81$ ) and convergent and discriminant validity.<sup>38</sup>

**Appraisals.** Kessler's<sup>39</sup> *Cognitive Appraisals of Health scale* is a 28-item inventory measuring appraisals associated with health-related events. The scale was developed with a breast cancer population and factor analysis generated 4 primary appraisals including threat, harm/loss, challenge, and benign, and secondary appraisals assessing perceptions of ability to cope. Respondents rate their level of agreement with their appraisal ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Directions were slightly modified so that the survey applied to both patients and partners. The modification included asking participants to think about "their cancer or the cancer of their spouse/partner." Higher scores represent higher agreement with the appraisal type. Primary scale estimates of internal consistency are adequate with Cronbach  $\alpha$ s scores above .70 for each primary appraisal scale.<sup>39</sup> Construct and concurrent validities have been established.<sup>39</sup> In addition to the Kessler scale, at both baseline and follow-up, patients and partners were asked to rate the extent to which they had made "peace" with *your cancer* (when completed by patients) or *his or her cancer* (when completed by partners), on a 4-point scale ranging from *not at all* to *a large extent* as an additional measure of changes in appraisal.

**Table 2.** Patient and Spouse Outcomes Pre- and Postintervention.<sup>a</sup>

Measure	Patient pre, M (SD)	Patient post, M (SD)	Spouse pre, M (SD)	Spouse post, M (SD)
HADS-anxiety	6.50 (4.5)	5.3 (3.9)	<b>8.9 (4.5)</b>	<b>7.5 (3.7)<sup>b</sup></b>
HADS-depression	4.50 (3.6)	3.4 (3.9)	<b>5.1 (4.2)</b>	<b>3.7 (4.3)<sup>b</sup></b>
HADS-total	11.0 (7.3)	11.0 (7.3)	<b>14.0 (8.2)</b>	<b>11.2 (7.5)<sup>b</sup></b>
FACIT meaning/peace	24.1 (6.8)	26.8 (4.0)	24.6 (4.48) <sup>c</sup>	26.3 (3.17) <sup>c</sup>
Threat appraisals	<b>16.7 (3.64)<sup>b</sup></b>	<b>12.10 (2.40)<sup>b</sup></b>	14.1 (3.40) <sup>c</sup>	15.9 (3.14) <sup>c</sup>
Harm/loss appraisals	20.5 (6.06)	18.6 (5.53)	19.3 (7.89)	18.7 (6.69)
Challenge appraisals	18.9 (2.64)	20.1 (2.06)	20.0 (3.92) <sup>c</sup>	18.3 (1.84) <sup>c</sup>
Secondary appraisals	11.3 (3.00)	11.1 (2.22)	<b>11.3 (2.11)<sup>b</sup></b>	<b>14.1 (2.21)<sup>b</sup></b>
Peace with illness	3.4 (0.67)	3.6 (0.52)	<b>3.2 (0.87)<sup>d</sup></b>	<b>3.7 (0.50)<sup>d</sup></b>
M-VITAS transcendence	9.6 (5.32) <sup>c</sup>	13.0 (3.03) <sup>c</sup>		

Abbreviations: FACIT, Functional Assessment of Chronic Illness Therapy; HADS, Hospital Anxiety and Depression scale; SD, standard deviation.

<sup>a</sup>Bold-faced items indicate statistically significant pre- to postdifferences. Italicized items indicate marginally significant pre- to postdifferences.

<sup>b</sup> $P < .01$ .

<sup>c</sup>.05 <  $P < .10$ .

<sup>d</sup> $P < .05$ .

**Transcendence.** The *Missoula Vitas Quality of Life Index*<sup>40</sup> was used to assess transcendence and was only completed by patients. The *M-VITAS* is a unique quality-of-life measure designed specifically for administration during the palliative phase of illness. This 25-item scale assesses symptoms, function, interpersonal, transcendence, and well-being quality of life. The transcendence subscale was used in the present study. Participants high in transcendence report value and meaning in life despite illness, comfort with the thought of their own death, and a sense of connection. Low transcendence is characterized by feeling disconnected, a burden to others, discomfort with the thought of one's death, and with less meaning in life since illness. The instrument has good reliability ( $\alpha = .77$ ) and validity and is especially useful for identifying the needs of dying patients.

**Exit interview.** At the time of the postintervention assessment, the principal investigator conducted in-person interviews to assess their satisfaction with the intervention activities and length, whether they would recommend the intervention to others in their situation, and which activities they found most helpful or least helpful and why.

### Data Analysis Plan

Descriptive statistics and paired samples *t* tests were conducted to test all hypotheses and the exploratory aim. Feasibility hypotheses were evaluated by calculating percentages of recruitment and retention to study end. Intervention efficacy was tested by conducting paired samples *t* tests comparing pre-intervention and postintervention depression and anxiety of patients and partners. An exploratory analysis of process variables (appraisals/peace with illness, meaning, and transcendence) for both patients and spouses was also evaluated with paired samples *t* tests. Finally, qualitative interviews were evaluated to assess satisfaction with intervention and collate common themes to inform changes in the intervention for future practice.

## Results

### Aim 1: Feasibility

The feasibility aims addressed participant recruitment, attendance, and retention. The study was completed over a 16-month period. In terms of recruitment, 36 patients were referred to the study and screened for eligibility by phone. Of these, 12 expressed no interest, 12 were interested but lived too far away, and 12 consented for the study with their partners. This recruitment rate of 33.3% fell short of the hypothesized rate of 50%; however, if recruitment calculations are limited to only those 24 who live within a reasonable distance of the cancer center, recruitment was 50%.

All couples in which the patient survived the duration of the study ( $n = 11$ ) completed all 4 sessions for an attendance rate of 100%, which exceeded the hypothesized attendance rate of 75%. Only 1 couple was discontinued from the study, due to patient death; thus, the study retention rate of 91.7% exceeded the hypothesized retention rate of 70%. Of the 11 couples, 10 completed the intervention in 4 to 6 weeks. One couple had a 6.5-month delay between assessment and the initiation of treatment, although once the intervention began it was completed within a 4-week period. This delay in start date was because of this patient's efforts to seek second opinions and treatments in other states.

### Aim 2: Efficacy

**Changes in patient and partner outcome variables.** Enrolled patients and partners had low levels of depression at baseline, as evidenced by group means on HADS-depression scale that were below the clinically significant cut point. Although patients had a nonclinically significant group mean for anxiety, the partner group did report mild anxiety. There were no significant differences between patient and spouse HADS scores at baseline or follow-up.

Among patients at baseline, 3 cases of anxiety and 2 cases of depression were identified according to the HADS cutoff score

of 8. After intervention, 3 cases of anxiety remained and 1 case of depression remained. No statistically significant differences were found between baseline and follow-up mean scores of HADS-anxiety, HADS-depression, or HADS-total scores among patients ( $P > .05$ ). See Table 2 for patient and spouse mean scores for every measure at baseline and follow-up.

Partners displayed reductions in HADS scores. Six cases of anxiety and 2 cases of depression were identified at baseline. At follow-up, 4 spouse cases of anxiety and the 2 cases of depression persisted. Spouses reported statistically significant reductions in anxiety;  $t(10) = 3.46, P = .006$ , Cohen  $d = 1.04, r^2 = 0.54$ ; depression,  $t(10) = 3.54, P = .005$ , Cohen  $d = 1.07, r^2 = .56$ ; and HADS total distress,  $t(10) = 4.77, P = .001$ , Cohen  $d = 1.44, r^2 = .69$ .

**Changes in patient and partner process variables.** Among patients, we found a statistically significant reduction in threat appraisals,  $t(9) = 4.14, P = .003$ , Cohen  $d = 1.31, r^2 = .66$ , and marginally significant increase in transcendence,  $t(10) = -1.96, P = .078$ , Cohen  $d = -0.78, r^2 = -.37$ . No changes were detected in measures of meaning in life; however, patients' reports of high meaning in life at baseline may have resulted in ceiling effects. Table 2 shows the mean scores on the process variables.

Examination of spouses revealed a more complicated picture for appraisals with a statistically significant increase in secondary appraisals,  $t(10) = -4.67, P = .001$ , Cohen  $d = -1.41, r^2 = .69$ , marginally significant increase in threat appraisals,  $t(10) = -1.98, P = .076$ , Cohen  $d = -0.60, r^2 = .28$ , and marginally significant decrease in challenge appraisals,  $t(10) = 1.90, P = .087$ , Cohen  $d = 0.56, r^2 = .27$ . With regard to meaning, spouses reported a significant increase in peace with illness,  $t(10) = -2.63, P = .025$ , Cohen  $d = -0.79, r^2 = .41$ , and a marginally significant increase in FACIT Meaning/Peace,  $t(10) = -2.17, P = .055$ , Cohen  $d = -0.65, r^2 = .32$ . Together, these results suggest that while the focus on end of life increased perceptions of threat, spouses may be coming to terms with the impending death of their loved one and may perceive a stronger belief in their ability to mobilize coping resources.

**Exit interviews.** Evaluation of in-person interviews conducted postintervention revealed that all couples were satisfied with intervention and reported it was useful. When asked specifically about the various activities, there was diversity in preference, but all were reported to be useful and appropriate. Couples were asked to identify ways in which the intervention was helpful to them and the most common reports were that the intervention enhanced comfort and peace of mind and facilitated difficult decisions and communication which they previously avoided. It is noteworthy that no participants reported feeling distressed as a result of assessing or discussing existential concerns, but rather viewed the encouragement to openly discuss existential concerns as a positive process. When asked what they would change about the intervention,

the most common request was that the intervention be lengthened to 6 to 8 weeks.

## Discussion

We pilot tested a 4-week meaning-based intervention for patients with advanced disease cancer and their partners. Our intervention addressed existential concerns directly within the safety and support of a close, loving relationship. Patients in Singer<sup>41</sup> and colleagues' study of quality end-of-life care identified "strengthening relationships with others" as one of the main domains of quality care. According to Florian<sup>18(p529)</sup> and colleagues, "when faced with the awareness of death, people may be motivated to increase proximity, closeness, intimacy, and commitment to others to mitigate the terror of death." Few evidence-based interventions exist for couples dealing with life-threatening illness in 1 partner. Specifically in the setting of advanced cancer, meaning-making interventions for couples are exceptionally rare. Most meaning-making interventions have been focused on the *individual* patient<sup>10,13,30,42</sup> or on *groups* of patients with advanced-stage cancer.<sup>20</sup> Because couples affected by cancer typically function as an "interdependent emotional unit,"<sup>21</sup> excluding partners from the potential benefits of a meaning-making intervention is not consistent with the tenants of quality palliative cancer care<sup>43</sup> and may also limit the opportunity for possible synergistic emotional healing when the intervention is delivered to patients and their partners together.

Our findings suggest feasibility of the intervention. Feasibility was demonstrated with a moderate screening-to-enrollment ratio (33%-50%), a high rate of attendance across the 4 intervention sessions (100%), and low attrition (8%, due to death of 1 patient).

Mohr<sup>26</sup> and colleagues were the first to publish results of a feasibility study of a meaning-based intervention for couples facing advanced-stage cancer. Their intervention consisted of 8 sessions compared to our 4, and they reported greater attrition in their study (33%) compared to ours. Notably, the attrition rate in a recent randomized trial of an 8-session meaning-centered group intervention in cancer was 57%.<sup>44</sup> This raises the question of the optimal number of sessions to maximize benefit and minimize drop-out from meaning-based interventions in seriously ill adults and their partners. Given the differential dropout between the individually focused and couples-based interventions described here, the possibility also exists that involving both members of the couple may help increase engagement in the intervention and reduce drop-out.

In terms of efficacy for our outcome variables, although our sample on average reported low distress and high meaning in life at baseline, the number of patients who exceeded the clinical cutoff for depressive symptom severity decreased from 2 to 1 postintervention, while partners reported significantly reduced depression and anxiety at the end of the intervention. Future research should focus on couples where one or both scores within the depressed and/or anxious range, which although more difficult to recruit, may provide a more stringent test of efficacy.

The significant decrease found in threat appraisals for patients at the end of our intervention is similar to findings of the couples-based study of Northouse et al<sup>28</sup> who found that patients with advanced breast cancer reported significantly less negative appraisal of illness than controls following a patient-caregiver-based information and support intervention.

Threat appraisals relate to depression and anxiety and were therefore important targets of this intervention. It is possible that the work done in the intervention reduced threat by making the future visible to patients and helping them gain a sense of greater control over that future.

In contrast, partners in the present study reported an increase in secondary and (marginally) threat appraisals, as well as reduced challenge appraisal, in spite of reduced anxiety and depression. This suggests that although the intervention increased their awareness of the severity of the cancer and its consequences, it also increased their perception of ability to cope with the illness and the future consequences. The significant increase in peace and marginally significant increase in meaning fit well with the goals of the intervention to facilitate making meaning of the experience and finding comfort in the process. It is interesting to note that we found more significant changes among partners than patients. Although the intervention was proposed to have an effect on both, a natural expectation was that it would have a larger impact on the person whose life was under threat. In future work, it would be valuable to continue to follow the partners through the death of the patient to determine whether the intervention effects helped with bereavement as well. A mixed methods approach in future work may help explain the contrasting findings for patients and partners.

Our interpretations of the meaning of changes in process variables are informed by the data and extant literature. However, a full understanding of how the process variables may impact outcomes in our intervention can only be achieved with a large randomized controlled trial that includes analyses of the content of the intervention sessions.

There are a number of strengths to the intervention tested here, including high rates of attendance and retention. Lee<sup>4</sup> identified the challenges facing meaning-making interventions in cancer such as the current study. The first challenge is that interventions need to serve a variety of cancers in order to be fully effective and adopted by health care providers. Another challenge is the need to offer these interventions at all stages of end-of-life treatment and palliative care. Finally, these interventions need to be acceptable to patients. The intervention reported here is focused on end-of-life concerns in general, not specific to any type of cancer. Furthermore, the intervention is brief both in total length (4 weeks) and in length of sessions (60 minutes) taking into account the limited time and energy available to the dyad. Short weekly homework assignments complement the work done during sessions. The themes and activities allow sessions to be tailored to the needs and preferences of the patient and partner. Another characteristic of the intervention that increased its acceptance is its experiential format. Rather than being focused on talk or

discussions, each theme is addressed through an activity, which is a less threatening way to address issues of death and dying—typically perceived as highly threatening.<sup>45</sup> Our results and the results of other small studies<sup>26,26</sup> support the potential use of meaning-making interventions for couples navigating the realities of advanced-stage cancer.

There are a number of limitations to the present study as well. Our study used a nonrandomized, single-arm design with no control condition, limiting our ability to conclude that improvements noted for patients and their partners were due to the intervention. Our sample size was small, and we conducted a number of statistical tests, creating the possibility that some of our significant results occurred by chance (type I error). Our results were not as robust as they might have been if the sample had been restricted to distressed couples, given that baseline distress can be a critical moderator of efficacy of psychosocial interventions of patients with cancer.<sup>46</sup> Future research should include follow-up beyond the postintervention assessment. Participants were all English speaking, almost half were educated at the postgraduate level, and over half reported annual household incomes of >US\$70 000; thus, the findings may not be generalizable to all couples facing advanced-stage cancer. Stressors about the future may be much more salient in couples where the death of one will result in financial pain in addition to emotional pain. Moreover, participants in our trial were between the ages of 46 and 68 years, thus limiting generalizability to younger and older couples. Finally, all patients were referred to the study by their oncology team and were willing to enroll in a meaning-making intervention study, creating the possibility of selection bias.

In spite of the preliminary nature of our results, the feasibility of our brief meaning-making intervention strengthens the case for offering these types of interventions tailored to the needs of couples living with the stress of advanced-stage cancer. In future work, the intervention should be tested in different settings and with interventionists with a range of levels of training. In the first test of the efficacy of this intervention, experienced licensed clinical psychologists administered the intervention in private settings (offices/patient homes); however, if more rigorous trials demonstrate efficacy, the intervention's external validity should be evaluated in other settings, specifically within cancer centers, institutional and residential/home hospice settings, and even community settings. It is possible the intervention can be delivered by nurses, health educators, and other individuals with less training than clinical psychologists. These adaptations will reduce costs and make the intervention more accessible to all patients with advanced disease, no matter the location or available resources.

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