Pilot Randomized Controlled Trial of Individual Meaning-Centered Psychotherapy for Patients With Advanced Cancer

William Breitbart, Shannon Poppito, Barry Rosenfeld, Andrew J. Vickers, Yuelin Li, Jennifer Abbey, Megan Olden, Hayley Pessin, Wendy Lichtenthal, Daniel Sjoberg, and Barrie R. Cassileth

William Breitbart, Andrew J. Vickers, Yuelin Li, Hayley Pessin, Wendy Lichtenthal, Daniel Sjoberg, and Barrie R. Cassileth, Memorial Sloan-Kettering Cancer Center; Megan Olden, Weill-Cornell Medical College of Cornell University, New York; Barry Rosenfeld, Fordham University, Bronx, NY; Shannon Poppito, Memorial Sloan-Kettering Cancer Center, New York, NY; and Jennifer Abbey, Independent Practice, Montclair, NJ.

Submitted March 29, 2011; accepted December 16, 2011; published online ahead of print at www.jco.org on February 27, 2012.

Supported by grants from the Kohlberg Foundation (W.B.) and from the Fetzer Institute (W.B.).

Authors' disclosures of potential conflicts of interest and author contributions are found at the end of this article.

Corresponding author: William Breitbart, MD, Department of Psychiatry and Behavioral Sciences, Memorial Sloan-Kettering Cancer Center, 641 Lexington Ave, 7th Floor, New York, NY 10022; e-mail: breitbart@mskcc.org.

© 2012 by American Society of Clinical Oncology

0732-183X/12/3012-1304/\$20.00

DOI: 10.1200/JCO.2011.36.2517

ABSTRACT

Purpose

Spiritual well-being and sense of meaning are important concerns for clinicians who care for patients with cancer. We developed Individual Meaning-Centered Psychotherapy (IMCP) to address the need for brief interventions targeting spiritual well-being and meaning for patients with advanced cancer.

Patients and Methods

Patients with stage III or IV cancer ($N = 120$) were randomly assigned to seven sessions of either IMCP or therapeutic massage (TM). Patients were assessed before and after completing the intervention and 2 months postintervention. Primary outcome measures assessed spiritual well-being and quality of life; secondary outcomes included anxiety, depression, hopelessness, symptom burden, and symptom-related distress.

Results

Of the 120 participants randomly assigned, 78 (65%) completed the post-treatment assessment and 67 (56%) completed the 2-month follow-up. At the post-treatment assessment, IMCP participants demonstrated significantly greater improvement than the control condition for the primary outcomes of spiritual well-being ($b = 0.39$; $P < .001$, including both components of spiritual well-being (sense of meaning: $b = 0.34$; $P = .003$ and faith: $b = 0.42$; $P = .03$), and quality of life ($b = 0.76$; $P = .013$). Significantly greater improvements for IMCP patients were also observed for the secondary outcomes of symptom burden ($b = -6.56$; $P < .001$) and symptom-related distress ($b = -0.47$; $P < .001$) but not for anxiety, depression, or hopelessness. At the 2-month follow-up assessment, the improvements observed for the IMCP group were no longer significantly greater than those observed for the TM group.

Conclusion

IMCP has clear short-term benefits for spiritual suffering and quality of life in patients with advanced cancer. Clinicians working with patients who have advanced cancer should consider IMCP as an approach to enhance quality of life and spiritual well-being.

J Clin Oncol 30:1304-1309. © 2012 by American Society of Clinical Oncology

INTRODUCTION

A growing literature has highlighted the importance of spiritual well-being and a sense of meaning for patients with advanced cancer.¹ Supportive care experts increasingly recognize the significance of the spiritual domain of care and identify the need for interventions that target spiritual well-being.²⁻⁵ In response to this need, we developed Individual Meaning-Centered Psychotherapy (IMCP), specifically tailored to the needs of patients with advanced cancer.^{6,7} This intervention is grounded in the writings of Frankl⁸ and informed by the work of Spiegel et al,^{9,10} Yalom et al,¹¹ and Kissane et al.¹² A randomized controlled trial comparing Meaning-Centered Group Psychotherapy (MCGP) with supportive

group psychotherapy demonstrated the efficacy of MCGP in improving spiritual well-being, meaning, and hopelessness.⁷ However, that study revealed several logistical barriers that exist when providing group interventions to patients with advanced cancer, resulting in substantial attrition. Because of the inflexibility inherent in group interventions, we adapted MCGP to an individual intervention in hopes of reducing attrition and missed sessions while maintaining the benefits.

Most psychotherapy intervention trials with patients who have advanced cancer have used a group format.¹³⁻¹⁷ Of the handful of individual psychotherapy interventions for patients with advanced cancer, few have used randomized controlled research designs. de Vries et al¹⁸ conducted an open

Fig 1. CONSORT diagram. IMCP, Individual Meaning-Centered Psychotherapy.

trial of a 12-session individual experiential-existential counseling intervention for patients with advanced cancer. Their intervention, however, was ineffective in reducing depression or loneliness or increasing patients' sense of purpose in life. In a controlled study of Dignity Therapy, Chochinov et al¹⁹ found no benefit for depression, quality of life, or spiritual well-being; however, patients reported significant improvement in their end-of-life experiences in response to postintervention questions. Thus, although potentially promising interventions have been described, there clearly remains a need for efficacious individual psychotherapeutic interventions that focus on the existential needs of patients with advanced cancer. Further, the effectiveness of such interventions must be demonstrated through randomized controlled clinical trials that use well-validated outcome measures.

Identifying an appropriate comparison for an individual psychotherapy intervention in patients with advanced cancer is challenging. We chose therapeutic massage (TM) as the comparison intervention to control for time and attention and in hopes of providing a potentially beneficial clinical encounter. TM has been demonstrated to benefit patients with cancer by reducing anxiety, mood disturbance, and physical symptom distress when compared with standard care.²⁰⁻²² This article describes the results of a pilot randomized controlled trial comparing IMCP with a TM intervention. On the basis of

our prior research with MCGP,⁷ we anticipated significantly greater improvements in spiritual well-being, meaning, quality of life, and hopelessness for patients receiving IMCP compared with those receiving TM. We also anticipated that TM would improve physical symptom distress, leading to a lack of significant group differences on this variable.

PATIENTS AND METHODS

Participants

Patients were recruited from outpatient clinics at Memorial Sloan-Kettering Cancer Center (MSKCC) between July 2004 and September 2006. Eligibility criteria included having a diagnosis of stage III or IV solid tumor cancers or non-Hodgkin's lymphoma, being ambulatory, being older than age 18 years, and speaking English. Patients were excluded from the study if, on the basis of clinician assessment, they had significant cognitive impairment, psychosis, Karnofsky performance scores below 50,²³ or other physical limitations that precluded participation in weekly psychotherapy or massage therapy sessions. Prospective participants were informed of the risks and benefits of study participation, and they provided written informed consent. The study was approved by the MSKCC and Fordham University Institutional Review Boards.

Study researchers had contact with 617 potential participants (CONSORT diagram, Fig 1). Of these initial contacts, 157 patients were inel-

igible, primarily because they did not have advanced cancer. An additional 188 individuals declined to participate in the study, and 152 expressed interest but never followed up after an initial contact. Because none of these individuals provided informed consent, no data were collected regarding nonparticipants. A total of 120 patients provided informed consent and were randomly assigned (by using randomly permuted blocks of random length) to a treatment arm: 64 (52.3%) to IMCP and 56 (47.7%) to TM. The sample was predominantly female (60.5%; $n = 72$) and married (48.3%; $n = 58$), with an average age of 54.4 years (standard deviation [SD], 11.6; range, 25 to 82). Participants had completed an average of 16.9 years of education (SD, 3.2). The majority of patients (82.4%) were white, with 6.7% black, 8.4% Hispanic, 1.7% Asian, and one (0.8%) other. Religious background included Jewish (31.7%), Catholic (30.8%), Protestant (14.2%), Baptist (1.7%), and other (14.2%); 6.7% reported no religious affiliation. The most common cancer diagnoses were breast (26.1%), colon (16.0%), pancreatic (9.2%), ovarian (8.4%), and lung (3.4%). All patients had either stage III (33.3%) or stage IV (66.7%) disease.

Procedures

After providing informed consent, patients were randomly assigned to one of the two study arms. Before random assignment, patients were asked to rate how useful they anticipated the two treatments would be in helping them cope with their illness. Random assignment was implemented through a password-protected database, ensuring that allocation could not be guessed before or changed after a participant was randomly assigned. Immediately before the first session (typically in the waiting room), participants were administered a battery of self-report questionnaires to assess spiritual and psychological well-being (the preintervention assessment, described in Procedures) and elicit relevant demographic and medical data. The assessment battery was re-administered immediately following the last session (postintervention) and a third time, approximately 2 months after completing treatment (follow-up assessment).

The assessment battery included the Functional Assessment of Chronic Illness Therapy (FACIT) Spiritual Well-Being Scale (SWB),²⁴ the McGill Quality of Life Questionnaire (MQOL),²⁵ the Hospital Anxiety and Depression Scale (HADS),²⁶ the Beck Hopelessness Scale (BHS),²⁷ the Memorial Symptom Assessment Scale MSAS,²⁸ and a clinical status assessment (eg, cancer diagnosis, treatment history). Demographic information was collected at baseline, and medical data were extracted from the patient's electronic medical record. Of note, the methodology, including participant population and recruitment procedures, study measures, and statistical analyses, are vir-

tually identical with that in our prior study of MCGP,⁷ with the exception of the format of the intervention and the choice of comparison intervention.

IMCP

IMCP is a manualized 7-week intervention designed to assist patients with advanced cancer in sustaining or enhancing a sense of meaning, peace, and purpose in their lives as they face limitations due to progression of disease and treatment. This intervention was adapted from MCGP, a manualized group therapy intervention developed by Breitbart et al.⁷ The individual format was intended to increase the flexibility of treatment implementation because scheduling or illness-related problems often hinder attendance in a group intervention, particularly with individuals who have advanced cancer. IMCP uses didactics, experiential exercises, and psychotherapeutic techniques (eg, reflection, clarification, and exploration) that promote the use of sources of meaning as resources in coping with advanced cancer. Seven 1-hour sessions address specific sources of meaning as well as themes related to cancer and identity, legacy, hope, and the finiteness of life. Patients are also assigned related readings and homework exercises (Table 1). The IMCP sessions were conducted by either a clinical psychologist or psychology doctoral students, all of whom received extensive training in IMCP before treating patients, and they received ongoing supervision from the developers of the intervention.

TM

Patients randomly assigned to TM received seven 1-hour sessions with a licensed massage therapist. TM involves manipulation of the soft tissue of the whole body or particular areas of the body. Massage therapists at MSKCC use an adaptation of Swedish massage that involves gentle touch for patients with cancer who are frail.²¹ All massage therapists had extensive clinical experience in TM with patients who have cancer and received supervision from an experienced, licensed massage therapist. The duration of TM sessions was comparable to the length of IMCP sessions in a comparable setting, but massage therapists deliberately restricted the nature and degree of verbal interaction during sessions.

Adherence to Treatment Format/Treatment Integrity

All IMCP sessions were audiotaped to ensure adherence to the treatment manual and to provide clinical supervision. Review of these recordings revealed a high degree of adherence (described in Adherence to Treatment Format/Treatment Integrity); IMCP therapists ($N = 4$) followed the treatment manual closely and engaged in the proscribed experiential exercises associated with each weekly topic. When applicable, therapists were informed of any deviations from the intervention format to provide corrective feedback.

Table 1. Weekly Topics and Goals of IMCP

Session	Weekly Topics and Goals
1	Concepts and Sources of Meaning: Introduction and Overview Session Goals: Learn patient's cancer story and introduce concepts and sources of meaning.
2	Cancer and Meaning: Identity Before and After Cancer Diagnosis Session Goals: Develop a general understanding of one's sense of identity and the impact cancer has made upon it.
3	Historical Sources of Meaning: Life as a Living Legacy (past, present, future) Session Goals: Develop an understanding of one's legacy through exploration of three temporal legacy modes: the legacy that's been given from the past, the legacy that one lives in the present; and finally, the legacy one will leave in the future. Participants also begin developing a Legacy Project.
4	Attitudinal Sources of Meaning: Encountering Life's Limitations Session Goals: Explore one of Frankl's core therapeutic principals, that ultimately we have the freedom and capacity to choose our attitude toward suffering and life's limitations and to derive meaning from that choice.
5	Creative Sources of Meaning: Engaging in Life via Creativity and Responsibility Session Goals: Develop an understanding of the significance of "creativity" and "responsibility" as important sources of meaning in life.
6	Experiential Sources of Meaning: Connecting with Life via Love, Nature, and Humor Session Goals: Foster an understanding of the significance of connecting with life through experiential sources of meaning—particularly through experiencing love, beauty, and humor.
7	Transitions: Reflections and Hopes for the Future Session Goals: Review the sources of meaning. Review of the Legacy Project. Reflections on the lessons and impact of the therapy, discussion of hopes for the future, and the transition from being in the therapy to enacting the lessons learned in daily life as the therapy comes to an end.

Abbreviation: IMCP, Individual Meaning-Centered Psychotherapy.

The analyses of treatment effect were performed by using a series of linear regression models with follow-up score as the dependent variable, treatment group as the predictor, and baseline score as a covariate (ie, an analysis of covariance [ANCOVA] model). The primary dependent variables in these analyses were spiritual well-being (SWB and its component subscales, Meaning and Faith) and overall quality of life (MQOL). Secondary dependent variables included measures of depression (HADS-D), anxiety (HADS-A), hopelessness (BHS), symptom burden (MSAS-Sx), and symptom distress (MSAS-Di). These analyses were conducted separately for the post-treatment and follow-up assessments, and a mixed model analysis was used to incorporate data from all three time points. Within group effect sizes for change in study variables reflect standardized mean differences in baseline SD units. Univariate analyses were also used to analyze sample characteristics (eg, attrition rates across treatment arm) and interventionist effects (ie, whether magnitude of improvement differed by therapist) across and within treatment arms. A priori power analyses, based on data from our pilot study of MCGP,⁷

Attrition was evaluated as the proportion of patients who remained in the group throughout the 7-week intervention and by comparing the number of sessions attended across the two interventions. There was no difference in the number of sessions completed by participants in the two treatment arms, and the proportion who completed all seven sessions was comparable across both conditions. IMCP participants attended an average of 5.3 sessions (SD, 2.6) versus 5.0 for TM participants (SD, 2.9; t , 0.53; P = .6). Of the 59 individuals who began IMCP, 39 (66%) attended all seven sessions versus 33 (61%) of 54 TM participants (χ^2 = 9.41; P = .22). Patients with better physical functioning (higher Karnofsky scores) attended more sessions, although this association did not reach statistical significance (r_s = .17; P = .06). Within the IMCP arm, there were no differences in attendance or attrition between the different study therapists.

As detailed in Table 2, ANCOVA analyses revealed significantly greater treatment effects at post-treatment for IMCP compared with

Variable	Baseline				Post-Treatment							Between-Group Effects		
	IMCP (n = 40)		TM (n = 37)		IMCP (n = 40)			TM (n = 37)						
	Mean	SD	Mean	SD	Mean	SD	Within-Group <i>d</i>	Mean	SD	Within-Group <i>d</i>	Difference	95% CI	<i>P</i>	
SWB	2.22	0.82	2.46	0.76	2.72	0.83	0.60	2.52	0.68	0.08	0.39	0.17 to 0.61	< .001	
SWB-M	2.49	0.76	2.64	0.73	2.98	0.69	0.68	2.72	0.65	0.12	0.34	0.12 to 0.56	.003	
SWB-F	1.70	1.27	2.12	1.19	2.15	1.38	0.35	2.14	1.21	0.02	0.42	0.04 to 0.80	.03	
BHS	7.58	4.38	6.38	4.67	4.70	4.04	−0.68	5.03	4.59	−0.29	−0.93	−2.54 to 0.68	.3	
MQOL	5.89	1.65	6.55	1.70	7.18	1.45	0.83	6.78	1.55	0.14	0.76	0.17 to 1.35	.013	
HADS-D	2.09	0.61	1.85	0.49	1.98	0.29	−0.23	1.97	0.27	0.30	−0.02	−0.13 to 0.10	.8	
HADS-A	2.39	0.61	2.14	0.60	2.24	0.23	−0.31	2.19	0.21	0.12	0.03	−0.08 to 0.14	.6	
MSAS-Sx	18.73	7.10	17.32	8.18	16.00	8.19	−0.36	19.70	7.98	0.29	−6.56	−9.83 to −3.30	< .001	
MSAS-Di	1.95	0.71	1.67	0.77	1.53	0.70	−0.59	1.76	0.75	0.12	−0.47	−0.72 to −0.21	< .001	
2-Month Follow-Up														
	(n = 33)							(n = 34)						
SWB	2.22	0.82	2.46	0.76	2.60	0.78	0.56	2.54	0.78	0.22	0.20	−0.11 to 0.51	.2	
SWB-M	2.49	0.76	2.64	0.73	2.78	0.67	0.55	2.77	0.76	0.29	0.09	−0.22 to 0.40	.6	
SWB-F	1.70	1.27	2.12	1.19	2.25	1.38	0.43	2.08	1.20	0.05	0.45	−0.01 to 0.90	.054	
BHS	7.58	4.38	6.38	4.67	4.84	3.98	−0.69	4.91	4.25	−0.39	−0.58	−2.35 to 1.20	.5	
MQOL	5.89	1.65	6.55	1.70	6.88	1.42	0.76	6.86	1.74	0.25	0.36	−0.34 to 1.07	.3	
HADS-D	2.09	0.61	1.85	0.49	1.89	0.52	−0.44	1.77	0.50	−0.23	−0.02	−0.23 to 0.19	.9	
HADS-A	2.39	0.61	2.14	0.60	2.16	0.57	−0.43	2.18	0.51	−0.06	−0.13	−0.34 to 0.08	.2	
MSAS-Sx	18.73	7.10	17.32	8.18	17.53	7.77	−0.16	17.42	8.43	0.06	−0.85	−4.36 to 2.66	.6	
MSAS-Di	1.95	0.71	1.67	0.77	1.85	0.75	−0.59	1.68	0.84	0.03	−0.05	−0.39 to 0.29	.8	

© 2012 by American Society of Clinical Oncology 1307

TM for SWB (total score, $b = 0.39$; $P < .001$), as well as for the Meaning ($b = 0.34$; $P = .003$), and Faith subscales of the SWB ($b = 0.42$; $P = .03$). There was also significantly greater improvement for IMCP participants compared with TM participants in overall quality of life (MQOL: $b = 0.76$; $P = .013$), number of physical symptoms endorsed (MSAS-Sx: $b = -6.56$; $P < .001$), and physical symptom distress (MSAS-Di: $b = -0.47$; $P < .001$). There were no significant differences between groups in reducing anxiety (HADS-A), depression (HADS-D), or hopelessness (BHS).

To examine the basis for the group differences observed, we analyzed standardized mean differences within each treatment arm. As evident in Table 2, participants in the IMCP arm improved on the SWB total score ($d = 0.60$) and the Meaning ($d = .68$) and Faith subscales (0.35), as well as on the MQOL ($d = 0.83$), MSAS-Sx ($d = -0.36$), and MSAS-Di ($d = -0.59$). However, a markedly different pattern was observed for participants receiving TM (Table 2), with little or no discernible improvement on these measures at the end of treatment (ie, small effect sizes for within-group comparisons). There were no differences in improvement across the different IMCP study therapists.

We followed a similar approach for the analysis of the long-term benefits of treatment by using a series of ANCOVA models to evaluate the differential impact of treatment on spiritual well-being and psychological functioning at the 2-month follow-up assessment. The differences were not statistically significant on any of the outcome variables at the 2-month follow-up assessment.

Finally, we used a series of mixed models to incorporate all three time points into the analysis of treatment effects (essentially comparing change trajectories across treatment groups). These analyses were largely consistent with the ANCOVA models, with a significant group-by-time interaction effect for SWB total score ($F = 3.70$; $P = .03$), MQOL ($F = 3.40$; $P = .04$), MSAS-Sx ($F = 5.06$; $P = .008$), and MSAS-Di ($F = 7.02$; $P = .002$). The group-by-time interaction was not significant for the two SWB subscales of Meaning ($F = 2.49$; $P = .09$) and Faith ($F = 3.05$; $P = .06$). There was also no significant group-by-time interaction for hopelessness, anxiety, or depression.

DISCUSSION

Existential and meaning-based interventions aimed at enhancing quality of life and spiritual well-being of patients with advanced cancer are among the most pressing needs for optimal supportive and palliative care.^{4,5} Our group has developed, refined, and pilot-tested IMCP to address this need.⁷ We initially focused on a group format for this intervention. However, it became clear that high rates of attrition and missed sessions necessitated a more flexible, individual format. This study represents our initial attempt to evaluate the effectiveness of an individual-format, meaning-based intervention in improving quality of life and spiritual well-being.

These results provide evidence that IMCP is effective in improving spiritual well-being, a sense of meaning, overall quality of life, and physical symptom distress in patients with advanced cancer. For many of the outcome variables (spiritual well-being, quality of life, and physical symptom distress), the improvements observed for IMCP patients at the post-treatment assessment were significantly stronger than those observed in our control condition (TM). Although no significant differences in treatment effects were observed at the 2-month follow-up assessment, most of the significant post-treatment findings were echoed in the mixed models analyses that included all

three time points. Attrition was also substantially less in this study of IMCP, because 66% of participants completed all seven treatment sessions compared with only 29% of participants in our MCGP trial.⁷ These results replicate and extend the findings of our randomized, controlled trial of a group format of MCGP in patients with advanced cancer but with markedly lower attrition rates.⁷ The consistency of these findings across the two studies provides evidence that Meaning-Centered Psychotherapy, whether in an individual or group format, is an effective intervention for existential distress in patients with advanced cancer, despite having less impact on symptoms of anxiety or depression.

We compared IMCP with TM to control for time and attention. Past studies have suggested that TM enhances psychological well-being and reduces symptom distress, but little improvement was evident for TM participants in this study. This null finding for TM may reflect the timing of our post-treatment assessments, because studies of TM have typically assessed patients 24 to 48 hours after treatment rather than 7 weeks later.²⁰ However, it is also possible that TM was helpful in that patients did not worsen. Without treatment, the trajectory of psychological distress and quality of life in patients with advanced cancer may decline. Future research should include a no-treatment condition to analyze the trajectory of distress in patients with cancer who have not been treated.

The possibility that psychological well-being deteriorates over time without intervention might also explain the somewhat weaker treatment effects observed at the 2-month follow-up assessment, because IMCP participants showed some attenuation in the improvements made during treatment (ie, smaller within-group effect sizes). However, the mixed models analysis suggests that the attenuation in treatment effects was modest. Nevertheless, the lack of significant improvements at the follow-up assessment in this study differs from our findings with MCGP,⁷ in which improvements were stronger 2 months post-treatment. The differences between our IMCP and MCGP studies may reflect unique benefits of a group-based intervention in this population.

This study has several limitations. As is true of many intervention studies focusing on patients with advanced cancer, we encountered difficulties in recruitment and attrition, resulting in a modest sample of well-educated patients who were willing to participate in a randomized clinical trial (limiting generalizability). Sample size limitations also hindered our statistical power, because our sample was roughly half as large as recommended by our *a priori* power analyses. Thus, despite observing substantial within-group effect sizes for many variables in the IMCP arm that indicated clinically significant improvement for IMCP participants, some between-group differences were not statistically significant. Likewise, sample size limitations and the unequal allocation of patients to therapists (one therapist treated 43 participants, and the remaining 21 IMCP participants were divided among three different therapists) hindered analysis of whether some IMCP therapists were more effective than others or whether particular patient characteristics predicted treatment response. Therapists were also confounded with treatment arm because trained massage therapists conducted TM and psychologists conducted IMCP. Treatment adherence was methodically assessed; however, the inter-rater reliability of adherence ratings was not evaluated. Finally, because study participation was not contingent on having a requisite level of distress, participants with relatively little distress had less opportunity to improve following intervention than those with more distress.

Despite these limitations, this pilot randomized controlled trial provides preliminary support for the efficacy of IMCP in enhancing

spiritual well-being, a sense of meaning, and overall quality of life and reducing physical symptom distress in patients with advanced cancer. The need for empirically supported interventions for patients struggling with existential distress and end-of-life despair has been widely acknowledged, and this study provides support for IMCP as a means to accomplish this important goal.

AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST

The author(s) indicated no potential conflicts of interest.

REFERENCES

1. Sinclair S, Pereira J, Raffin S: A thematic review of the spirituality literature within palliative care. *J Palliat Med* 9:464-479, 2006
2. Breitbart W, Gibson C, Poppito SR, et al: Psychotherapeutic interventions at the end of life: A focus on meaning and spirituality. *Can J Psychiatry* 49:366-372, 2004
3. Chochinov HM, Cann BJ: Interventions to enhance the spiritual aspects of dying. *J Palliat Med* 8:S103-S115, 2005
4. Institute of Medicine: Improving Palliative Care for Cancer. Washington, DC, National Academies Press, 2001
5. Puchalski C, Ferrell B, Virani R, et al: Improving the quality of spiritual care as a dimension of palliative care: The report of the Consensus Conference. *J Palliat Med* 12:885-904, 2009
6. Breitbart W: Spirituality and meaning in supportive care: Spirituality- and meaning-centered group psychotherapy interventions in advanced cancer. *Support Care Cancer* 10:272-278, 2002
7. Breitbart W, Rosenfeld B, Gibson C, et al: Meaning-centered group psychotherapy for patients with advanced cancer: A pilot randomized controlled trial. *Psychooncology* 19:21-28, 2010
8. Frankl VF: *Man's Search for Meaning* (ed 4). Boston, Massachusetts, Beacon Press, 1992
9. Spiegel D, Yalom ID: A support group for dying patients. *Int J Group Psychother* 28:233-245, 1978
10. Spiegel D, Bloom JR, Yalom I: Group support for patients with metastatic cancer: A randomized

outcome study. *Arch Gen Psychiatry* 38:527-533, 1981

11. Yalom ID, Greaves C: Group therapy with the terminally ill. *Am J Psychiatry* 134:396-400, 1977
12. Kissane DW, Bloch S, Smith GC, et al: Cognitive-existential group psychotherapy for women with primary breast cancer: A randomised controlled trial. *Psychooncology* 12:532-546, 2003
13. Fawzy FI, Fawzy NW: Group therapy in the cancer setting. *J Psychosom Res* 45:191-200, 1998
14. Goodwin PJ, Leszcz M, Koopmans J, et al: Randomized trial of group psychosocial support in metastatic breast cancer: The BEST study—Breast-Expressive Supportive Therapy study. *Cancer Treat Rev* 22:91-96, 1996
15. Edelman S, Bell DR, Kidman AD: A group cognitive behaviour therapy programme with metastatic breast cancer patients. *Psychooncology* 8:295-305, 1999
16. Edmonds CV, Lockwood GA, Cunningham AJ: Psychological response to long-term group therapy: A randomized trial with metastatic breast cancer patients. *Psychooncology* 8:74-91, 1999
17. Coward DD: Facilitation of self-transcendence in a breast cancer support group: II. *Oncol Nurs Forum* 30:291-300, 2003
18. de Vries MJ, Schilder JN, Mulder CL, et al: Phase II study of psychotherapeutic intervention in advanced cancer. *Psychooncology* 6:129-137, 1997
19. Chochinov HM, Kristjanson LJ, Breitbart W, et al: Effect of dignity therapy on distress and end-of-life experience in terminally ill patients: A randomized controlled trial. *Lancet Oncol* 12:753-762, 2011
20. Ahles TA, Tope DM, Pinkson B, et al: Massage therapy for patients undergoing autologous

AUTHOR CONTRIBUTIONS

Conception and design: William Breitbart, Shannon Poppito, Barry Rosenfeld, Andrew J. Vickers, Hayley Pessin, Barrie R. Cassileth

Collection and assembly of data: William Breitbart, Shannon Poppito, Barry Rosenfeld, Jennifer Abbey, Megan Olden, Hayley Pessin, Wendy Lichtenthal

Data analysis and interpretation: William Breitbart, Barry Rosenfeld, Andrew J. Vickers, Yuelin Li, Hayley Pessin, Daniel Sjoberg, Barrie R. Cassileth

Manuscript writing: All authors

Final approval of manuscript: All authors

bone marrow transplantation. *J Pain Symptom Manage* 18:157-163, 1999

21. Cassileth BR, Vickers AJ: Massage therapy for symptom control: Outcome study at a major cancer center. *J Pain Symptom Manage* 28:244-249, 2004

22. Post-White J, Kinney ME, Savik K, et al: Therapeutic massage and healing touch improve symptoms in cancer. *Interg Cancer Ther* 2:332-344, 2003

23. Karnofsky DA, Burchenal JH: The clinical evaluation of chemotherapeutic agents in cancer, in MacLeod CM (ed): *Evaluation of Chemotherapeutic Agents*. New York, NY, Columbia University Press, 1949, pp. 191-205

24. Brady MJ, Peterman AH, Fitchett G, et al: A case for including spirituality in quality of life measurement in oncology. *Psychooncology* 8:417-428, 1999

25. Cohen SR, Mount BM, Strobel MG, et al: The McGill Quality of Life Questionnaire: A measure of quality of life appropriate for people with advanced disease—A preliminary study of validity and acceptability. *Palliat Med* 9:207-219, 1995

26. Zigmond AS, Snaith RP: The hospital anxiety and depression scale. *Acta Psychiatr Scand* 67:361-370, 1983

27. Beck AT, Weissman A, Lester D, et al: The measurement of pessimism: The hopelessness scale. *J Consult Clin Psychol* 42:861-865, 1974

28. Portenoy RK, Thaler HT, Kornblith AB, et al: The Memorial Symptom Assessment Scale: An instrument for evaluation of symptom prevalence, characteristics and distress. *Eur J Cancer* 30A:1326-1336, 1994