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# The Meaning of Life Intervention for Patients With Advanced-Stage Cancer: Development and Pilot Study

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**P**alliative care is a patient treatment approach that attempts to improve the quality of life (QOL) of patients facing life-threatening diseases. Palliative care focuses on the prevention and relief of suffering by means of early identification and assessment and the treatment of pain and other physical, psychosocial, and spiritual problems (Sepúlveda, Marlin, Yoshida, & Ullrich, 2002). Unlike the traditional curative approach, palliative care not only focuses on medical care, such as physical symptom control, but also integrates the psychosocial and spiritual aspects of patient care to enhance QOL (World Health Organization [WHO], 2002). In a review of treatments for existential distress in patients with life-threatening diseases, LeMay and Wilson (2008) summarized that when patients were asked to reflect on issues important to them, they often expressed the need to discuss existential themes such as meaning, purpose, relationships, and death. LeMay and Wilson (2008) further pointed out that existential concerns could be extremely distressing for some patients at the end of life and, if left unattended, these concerns might threaten patients' psychosocial well-being and QOL; increase their level of anxiety, depression, and suicidal ideation; and decrease their will to live. Recognition that existential well-being is an important determinant of QOL, particularly in people with life-threatening diseases, is increasing (Cohen, Mount, Tomas, & Mount, 1996; Field & Cassel, 1997; O'Boyle & Waldron, 1997). In addition, researchers have suggested that a sense of meaning is one of the most important variables that should be included in assessments and interventions for patients with advanced-stage cancer (Thompson, 2007).

Despite the apparent importance of enhancing a sense of meaning in patients with life-threatening diseases, few clinical interventions have been developed to address this critical issue (Breitbart et al., 2010). Arraf,

**Purpose/Objectives:** To develop the Meaning of Life Intervention in response to the need for brief and meaning-focused interventions in palliative care and to establish potential effect sizes for future full-scale randomized, controlled trials.

**Design:** A randomized, controlled trial conducted to pilot test the Meaning of Life Intervention.

**Setting:** A 68-bed oncology inpatient ward in an urban acute general hospital in Hong Kong.

**Sample:** 84 patients with advanced-stage cancer. Fifty-eight completed the study.

**Methods:** Assessments of outcome variables were conducted at baseline and one day and two weeks after the intervention. Patients were randomly allocated to the intervention group or the control group. Repeated measures analysis of covariance were conducted to assess the impact of the Meaning of Life Intervention on participants' quality of life.

**Main Research Variables:** The primary outcome was quality of life and was measured by the Quality-of-Life Concerns in the End-of-Life (QOLC-E) questionnaire and with a single-item scale on global quality of life. The eight subscales of the QOLC-E served as secondary outcomes.

**Findings:** Statistically significant main effects were noted for the group in the QOLC-E questionnaire total score, the single-item scale on global quality of life, and the existential distress subscale of the QOLC-E questionnaire. The effects represented a medium effect size.

**Conclusions:** The results of this pilot study show that the Meaning of Life Intervention can improve quality of life, particularly existential distress.

**Implications for Nursing:** The Meaning of Life Intervention represents a potentially effective and efficient intervention that is feasible for implementation by nursing staff for patients with advanced-stage cancer in a palliative care setting.

Cox, and Oberle (2004) noted that, when deciding the length and format of an intervention and its outcome measurements in palliative care research, patient burden,

deterioration in physical or cognitive condition, and priority over how to spend time when death is impending are some of the factors that should be taken into account. In addition, the intervention and measurement should be relatively brief and easy to implement while still including the core components of the subject matter. Patients participating in psychosocial palliative research are generally open to discussing end-of-life issues and may benefit from these discussions, but that research should only be conducted in an ethical manner that minimizes burden, maximizes benefits, maintains autonomy, and allows patients to advocate for themselves (Pessin et al., 2008). The current study was designed and implemented to address the need for brief and meaning-focused interventions in palliative care. The Meaning of Life Intervention for palliative care was developed by the authors and a pilot randomized, controlled trial was conducted to establish potential effect sizes for future full-scale randomized, controlled trials.

## Literature Review

A small but growing body of literature has been developing on meaning-focused psychotherapeutic interventions for palliative care. Previous interventions mostly were based on logotherapy, a school of psychotherapy founded by Viktor Frankl (1961) that focuses on the meaning of human existence and man's search for such a meaning. According to logotherapy, existential distress results from a lack of meaning (Frankl, 1967, 2006).

People can discover meaning in their achievements or accomplishments (creative values), in their appreciation of something or love for someone (experiential values), and in the stand they take toward unavoidable predicaments (attitudinal values). Although meaning of life may change, it never ceases to be. In the widest possible sense, logotherapy is the treatment of a patient's attitude toward his or her unchangeable fate. Therefore, logotherapy is a kind of psychotherapy particularly suitable for patients encountering life-threatening diseases.

Zuehlke and Watkins (1975) applied logotherapy on a small group of patients with terminal illnesses. The intervention consisted of six 45-minute sessions in a two-week interval, during which the logotherapist guided the patients to deal with thoughts and feelings in the present, helped them shift their attention from death to areas of life that had previously provided meaning and satisfaction, and provided them with the opportunity to relate with their significant others. The intervention group reported a significantly greater increase in their perceived purpose in life than did the control group.

Breitbart et al. (2010) developed a meaning-centered group psychotherapy based on logotherapy and empirical findings from related studies (Breitbart, 2002; Breitbart & Heller, 2003; Greenstein & Breitbart, 2000). The intervention consisted of eight weekly 90-minute sessions aimed at helping patients with advanced-stage cancer to sustain or enhance a sense of meaning, peace, and purpose in their lives even as they approached the end of life. The intervention used a mixture of didactics, discussion, and experiential exercises focusing on themes related to meaning and advanced-stage cancer. Session themes included concepts and sources of meaning; cancer and meaning; meaning and historical context of life; storytelling and life projects; limitations and the finiteness of life; responsibility, creativity, and deeds; experience, nature, art, and humor; and termination, goodbyes, and hopes for the future. Participants also were assigned readings and homework related to the themes to be used in the coming sessions. Breitbart et al. (2010) conducted a pilot randomized, controlled trial based on that intervention and found that increases in overall spiritual well-being, a sense of meaning, and faith were significantly greater in the meaning-centered psychotherapy group than in the supportive psychotherapy comparison group; no significant between-group differences were found in hopelessness, attitudes toward hastened death, optimism, and depression and anxiety.

Lee, Cohen, Edgar, Laizner, and Gagnon (2006) used meaning-making coping to facilitate the search for meaning following a cancer diagnosis. Intervention sessions were therapist-led and structured around three main tasks: reviewing the impact and meaning of the cancer diagnosis, exploring past significant life events and successful ways of coping as related to the current cancer experience, and discussing life priority and goal changes that give meaning to life. The number and length of the intervention sessions were individualized to respect patients' capacity. In another randomized, controlled pilot study by Henry et al. (2010), the meaning-making intervention group was found to have a significantly better sense of meaning in life than the usual care control group after the intervention. No significant between-group differences were found in existential well-being, overall QOL, anxiety and depression, and self-efficacy (Henry et al., 2010).

## Development of the Meaning of Life Intervention

The authors' first task was to develop a brief intervention that would help participants reflect on their lives based on the sources of meaning of life proposed in logotherapy: creative, experiential, and attitudinal values. The intervention consisted of two sessions during a two- to three-day window. The first session

involved a semistructured interview that facilitated the search for meaning; the second session involved a review of a summary sheet prepared based on findings from the first session.

In the first session, which was anticipated to last for 30–60 minutes, the authors focused on facilitating participants to talk about their life and were guided by an interview manual containing five core questions. The first question (“What do you think about your life?”) facilitated a review of significant life events, primarily creative values. The second question (“How have you faced adversities in life?”) aimed to explore internal and external resources, primarily attitudinal values. The final three questions (“What do you do to love yourself and others?”, “What brings you joy?”, and “What do you appreciate in your life?”) aimed to facilitate a review of relationships with the outside world, primarily experiential values. Each core question was followed by a series of probing questions, if needed. Throughout the interview, the facilitator followed the participant’s cues, encouraging disclosure of thoughts, feelings, and memories, and helping to frame them in terms of the three values that give meaning of life (creative, experiential, and attitudinal values).

After the session, the facilitator listened to the tape-recorded session to extract significant statements and formulate generalized meanings. A written summary with three themes, namely “the taste of life” (primarily a summary of significant life events and their creative values), “the power of love” (primarily a summary of relationships with the outside world and their experiential values), and “the meaning of life” (primarily a summary of unchangeable fates and their attitudinal values) was prepared.

A second, shorter session (15–30 minutes) was planned for the following day. The purpose of this session was to verify the content of the written summary (Chochinov et al., 2005) and to reinforce a sense of meaning. The written summary was given to the participants and read aloud by the facilitator. The participants were asked to comment on whether the summary correctly represented their views and, if so, the written summary was given to them. If modifications of the content of the summary sheet were needed, a modified version of the summary sheet would be sent to the participants in the following day.

Although the summary copy was presumably a private record of their life, at the end of the second session, participants were given the option to write cards to anyone they wanted to express sentiments such as love, gratitude, encouragement, or a blessing. Those who chose to write cards could either write them by themselves or with the assistance of the facilitator, depending on their literacy and physical condition. Once written, the cards were left with the participants.

The facilitator of the Meaning of Life Intervention could be a healthcare professional from any discipline caring for patients with life-threatening diseases after he or she has received training in the concept of meaning of life and in how to administer the intervention.

## **Pilot Study on Acceptability and Feasibility**

After the research team developed the Meaning of Life Intervention, it was tested on nine patients with advanced-stage cancer. The wording of the interview questions and the question sequence used in the first session of the intervention were modified during the process. The intervention was found to be acceptable and feasible given that all the participants were able to complete the interview in the first session and the data gathered from the interview questions were able to provide information for the preparation of the meaning of life written summary to be used in the second session.

## **Methods Design**

The current study was a randomized, controlled trial. The intervention group received usual care and the Meaning of Life Intervention, whereas the control group received usual care alone. Before the study started, a researcher generated a random allocation sequence using a computerized random-number generator with a permuted block design. The block sizes were 4 and 7. Each entry of the random allocation sequence was numbered sequentially. Another member of the research team was responsible for enrollment and outcome assessments—the participants were numbered sequentially, baseline assessments were conducted, and the participants’ background information and sequential numbers were prepared for group assignment. The researcher assigning participants to groups neither had contact with any participant other than to perform the Meaning of Life Intervention nor knew the results of the outcome assessments before the study ended.

## **Procedure**

Approval was obtained from the ethics committees of Hong Kong Polytechnic University and Kowloon West Cluster, Hospital Authority. During the study period, one of the researchers, a nursing officer working in the inpatient ward, assessed the eligibility of patients and invited eligible patients to join the study. Eligible patients were informed about the study and written consent or verbal consent in case of illiteracy or physical weakness was obtained from those who agreed to participate.

Participants were assessed at three time points: baseline (T1), one day (T2), and two weeks (T3) after the intervention. Participants’ QOL was assessed at bedside in the oncology ward and demographic characteristics,

length of survival since diagnosis of cancer, and walking ability were collected from participants' medical records at T1. The participants were then randomly assigned to the intervention or the control group. The Meaning of Life Intervention was conducted with the intervention group one day after baseline assessments. Postintervention assessments at T2 and T3 were conducted either in person or by phone if the participant had been discharged. Qualitative information on the usefulness of the intervention was collected at T3. To ensure that data were collected at approximately equivalent intervals after randomization for both groups, each participant of the control group was assessed three days after baseline assessments (standard time when a participant in the intervention group finished the Meaning of Life Intervention) and two weeks after their second assessments.

## Instruments

The primary outcome was QOL as measured by the **Quality-of-Life Concerns in the End-of-Life (QOLC-E)** questionnaire (Pang et al., 2005) and a **single-item QOL scale**. The QOLC-E was developed to measure the QOL of Chinese patients with advanced-stage diseases on how they felt in the previous two days and has been validated in patients with advanced-stage cancer. The QOLC-E is an 11-point (from 0 [the least desirable] to 10 [the most desirable situation]), 28-item scale with eight subscales: support, value of life, food-related concerns, healthcare concerns, physical discomfort, negative emotions, sense of alienation, and existential distress. The QOLC-E has achieved good construct validity in terms of internal consistency, and convergent and divergent validity. The Cronbach alpha of the overall scale was 0.87 and 0.64–0.81 for individual subscales (Pang et al., 2005). In Pang et al.'s (2005) study, the total score of the QOLC-E yielded moderate to high correlations with a single-item QOL scale (0.6), the Self-Maintenance Activities of Daily Living (–0.63), the Instrumental Activities of Daily Living (0.3) (Lawton & Brody, 1969), and the Hospital Anxiety and Depression Scale (–0.29) (Zigmond & Snaith, 1983). In the current study, based on the baseline data of the 84 participants who enrolled, the Cronbach alpha of the overall scale was 0.56 and 0.61–0.8 for the individual subscales. The QOLC-E requires about 30 minutes to complete. The single-item scale is an 11-point (from 0 [the least desirable] to 10 [the most desirable situation]) measure of global QOL (Pang et al., 2005). The eight subscales of the QOLC-E served as secondary outcomes. Additional information collected at baseline included sociodemographic characteristics, religious beliefs, and medical information.

For the experimental group, an open-ended question was asked at T3 to collect qualitative information on its usefulness: "You have shared your life perspectives and finished a little card writing project. What do you

think and how do you feel about the whole experience and process?"

## Statistical Analysis

Quantitative data were analyzed using SPSS®, version 17.0. Repeated measures analysis of covariance (ANCOVA) was performed with treatment group (intervention versus control) as the independent variable and time (T2 and T3) as the repeated variable. Each QOL-related outcome variable was tested individually, with its corresponding baseline score collected at T1 used as a covariate to statistically control for baseline differences in QOL between the two groups. Because this was a pilot study, intention-to-treat analyses were not feasible.

## Qualitative Analysis

Phenomenologic analysis techniques delineated by Colaizzi (1978) were used to organize and synthesize the data. All participants' data were read several times to acquire a general picture. Each participant's data were reviewed an additional time to extract phrases or sentences that directly pertained to the intervention's usefulness—also known as extracting significant statements. The significant statements that referred to specific things or people were transposed to a more general formulation. The meaning of each significant statement was then spelled out—also known as formulating meanings. Meanings were formulated by creative insight that discovered and illustrated those meanings hidden in the various contexts and horizons of the investigated phenomenon that were announced in participants' data. The formulated meanings were organized into clusters of themes.

## Participants

Participants were recruited from a 68-bed oncology inpatient ward in a major acute general hospital and also the cluster referral center for oncology in Hong Kong. Patients were eligible if they (a) had a diagnosis of advanced cancer (refractory to established curative treatments or for which no established curative treatments existed), (b) were aged 18 or older, and (c) were expected to be hospitalized for at least three days to complete baseline assessment and the meaning of life intervention (if so allocated). Patients were excluded if they had significant cognitive impairment or psychoses or were physically too weak to communicate.

The study was conducted from September 2010 to March 2011. One hundred and twenty-nine eligible patients were identified, and 45 refused to participate. Those who declined did so because they were not interested in joining the study ( $n = 20$ ), were tired ( $n = 15$ ), or because of other reasons ( $n = 10$ ). For the remaining 84 who enrolled, 44 and 40 were randomly allocated to the experimental group and the control group, respectively

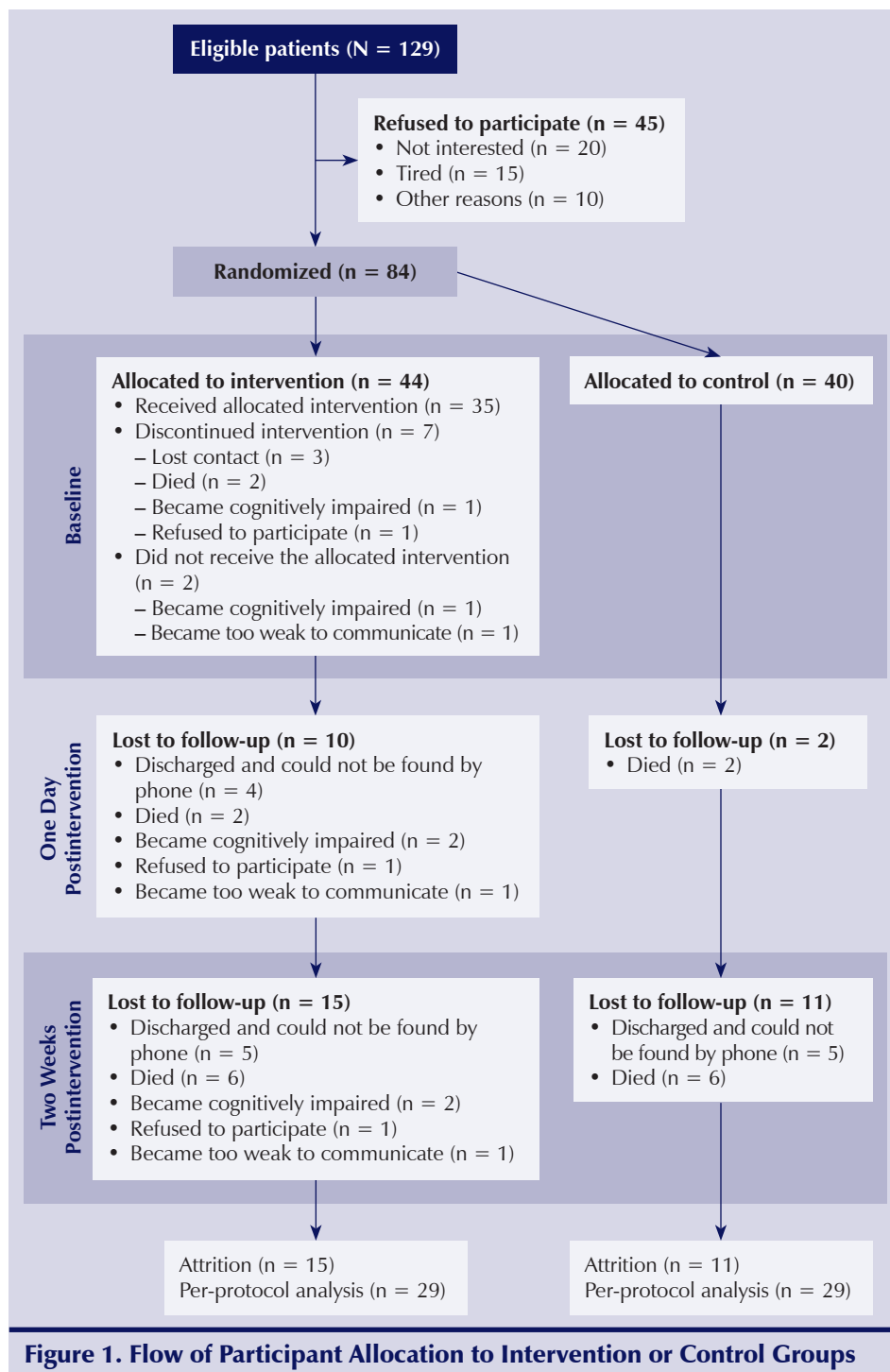
(see Figure 1). Participants' baseline characteristics and the results of group comparisons are shown in Table 1. Because no differences in demographic and clinical characteristics were noted across the two groups, the following sample description pertains to the entire sample: The mean age of the 84 enrolled participants was 64.6 years (SD = 11.6). The majority of the participants were male, had received a primary education or higher, were married, had a declared religious affiliation, and walked with help or were chair- or bed-bound. The

median length of survival since the cancer diagnosis was 21 weeks.

Regarding QOL at baseline, no differences were noted in the mean scores of the QOLC-E subscales physical discomfort, food-related concerns, negative emotions, sense of alienation, support, value of life, and existential distress between the two groups. The mean scores of these variables of the 84 enrolled participants were 7.1 (SD = 2), 5.3 (SD = 2.8), 6.7 (SD = 2.4), 6.4 (SD = 2.4), 7 (SD = 1.8), 6.2 (SD = 1.7), and 4.9 (SD = 2.5), respectively.

However, the control group had better QOL than the intervention group at baseline as measured by the following variables: the mean score of the QOLC-E total score (6.5 and 5.9, respectively), the score of the single-item scale on QOL (6.2 and 5.2, respectively), and the mean score of the QOLC-E subscale healthcare concerns (6.5 and 5.4, respectively).

Fifty-eight participants completed the study and 26 dropped out. Those who dropped out did so because of loss of contact (n = 10), death (n = 12), or other reasons (n = 4). Regarding demographic and clinical characteristics, those who completed the study and those who did not were not statistically different in age, gender, marital status, length of survival since diagnosis of cancer, and walking ability. However, the proportion of participants who declared religious affiliation was higher in those who completed the study (55%) than in those who did not (46%) ( $\chi^2$  [2, N = 84] = 8.24, p = 0.04). Regarding QOL at baseline, those who completed the study and those who did not were not statistically different in the single-item global QOL score or in the mean scores of six QOLC-E subscales: physical discomfort, food-related concerns, negative emotions, support, and value of life. However, those who completed the study had better QOL than



**Figure 1. Flow of Participant Allocation to Intervention or Control Groups**

those who did not at baseline as measured by the mean scores of the following variables: the QOLC-E total score (6.49 and 5.66, respectively,  $t[82] = 2.93$ ,  $p = 0.004$ ) and three of its subscales: sense of alienation (6.93 and 5.15, respectively,  $t[82] = 3.34$ ,  $p = 0.001$ ), existential distress (5.26 and 3.92, respectively,  $t[82] = 2.33$ ,  $p = 0.022$ ), and healthcare concerns (6.42 and 4.91, respectively,  $t[82] = 3.66$ ,  $p = 0.000$ ).

## Results

Repeated measure ANCOVA were conducted to examine the impact of the Meaning of Life Intervention on QOL. After adjusting for baseline QOL scores, statistically significant main effects were noted between the control and intervention group in the following outcome variables: the mean score of the QOLC-E total score ( $F[1, 55] = 6.9$ ,  $p < 0.05$ , partial eta squared = 0.11), the single-item QOL score ( $F[1, 55] = 4.2$ ,  $p < 0.05$ , partial eta squared = 0.07), and the mean score of the existential distress subscale of the QOLC-E ( $F[1, 55] = 6.9$ ,  $p < 0.05$ , partial eta squared = 0.11). The resulting partial eta squared values represented a medium effect size (Cohen, 1988). No statistically significant main effects were noted between the control and the intervention group in the remaining outcome variables and there were neither statistically significant time multiplied by group interactions nor main effects for time. In summary, the intervention had a medium effect on QOL as measured by the mean score of the QOLC-E total score and the single-item scale score, and on the mean score of the existential distress subscale of the QOLC-E. The results are summarized in Table 2.

## Ancillary Quantitative Analysis

Participants in the intervention group were provided with an opportunity to write cards to anyone they wished to express sentiments. Of the 35 participants who had received the allocated intervention, nine (26%) wrote cards. Those who wrote cards and those who did not had similar background characteristics and QOL variables at baseline except for existential distress. At baseline, those who wrote cards were significantly more distressed than those who did not write cards (2.44 and 5.14, respectively,  $t[33] = 2.97$ ,  $p = 0.006$ ).

Twenty-nine participants of the intervention group completed the study. Seven of those who completed

**Table 1. Baseline Characteristics and Group Comparisons**

Characteristic	Intervention (N = 44)		Control (N = 40)		t	p
	$\bar{X}$	SD	$\bar{X}$	SD		
Age (years)	64	12.4	65.3	10.9	0.49	0.625
<b>QOLC-E subscale<sup>a</sup></b>						
Physical discomfort	7	2	7.1	2	0.124	0.902
Food-related concerns	5.1	2.9	5.6	2.7	0.745	0.458
Negative emotions	6.3	2.3	7.1	2.5	1.426	0.158
Sense of alienation	6.1	2.6	6.7	2.1	1.312	0.193
Support	6.6	1.7	7.4	2	1.902	0.061
Value of life	6.1	1.7	6.4	1.7	0.886	0.378
Existential distress	4.4	2.5	5.4	2.5	1.769	0.081
Healthcare concerns	5.4	2	6.5	1.6	2.786	0.007
<b>QOLC-E total<sup>a</sup></b>	5.9	1.2	6.5	1.2	2.279	0.025
<b>Single-item global QOL<sup>a</sup></b>	5.2	1.6	6.2	1.8	2.658	0.009
Characteristic	n		n		$\chi^2$	p
<b>Gender</b>					0.035	0.851
Female	20		19			
Male	24		21			
<b>Educational level</b>					0.311	0.856
Illiterate	11		8			
Primary	19		18			
Secondary or above	14		14			
<b>Marital status</b>					5.385	0.068
Non-married	10		2			
Married	28		31			
Widowed	6		7			
<b>Religion</b>					2.954	0.399
None	22		18			
Ancestor worship	10		7			
Buddhism	4		9			
Christianity	8		6			
<b>Walking ability</b>					2.235	0.525
Ambulant	16		20			
Walk with help	9		7			
Chair-bound	9		8			
Bed-bound	10		5			

<sup>a</sup> Scores ranged from 0–10, with higher scores representing better QOL.

QOL—quality of life; QOLC-E—Quality-of-Life Concerns in the End-of-Life questionnaire

Note. Length of survival since diagnosis of cancer (weeks) was 24.5 for the intervention group and 20 for the control group. Median length of survival was in the 25th–27th percentile range.

the study (24%) wrote cards and 22 (76%) did not. After adjusting for baseline QOL scores, repeated measures ANCOVA showed no statistical differences in any outcome variable between those who wrote cards and those who did not.

## Qualitative Feedback

For the intervention group, an open-ended question was asked at T3 to collect qualitative information on the usefulness of the intervention. Of the 29 participants who were available to provide data at T3, one participant did not feel that the intervention was particularly useful, and nine (31%) had no comments.

For the remaining 19 (66%), the usefulness of the intervention was identified from their comments on social, emotional and psychological, and spiritual aspects. Socially, participants felt that there was someone who was concerned about them. Mr. L, aged 63, said, "I felt better when there was someone who showed concern, which made this world more loving and caring."

Emotionally and psychologically, the intervention induced a sense of relief. Ms. N, aged 52, said, "I felt relieved after I talked about my suffering and life views. It also soothed my emotion."

Spiritually, the intervention clarified life views and enhanced self-understanding. Mr. C, aged 72, said, "It facilitated me to review my life views since I had not thought about them. I also understood myself more when reviewing my life."

However, two participants pointed out that not everyone was ready to talk about life, and that having to talk about life could place participants under pressure. In addition, although the experience was described in positive terms, only two participants talked specifically about the experience of card writing: they stated that the card recipients (their family members) were touched and delighted, and, consequently, they felt very pleased.

## Discussion

This study was designed to address the need for a brief, individualized, meaning-focused intervention in palliative care. The results of the current randomized, controlled trial show that the proposed intervention had a medium effect on QOL in patients with advanced-stage cancer, as measured by the total score

of the QOLC-E and a single-item scale on global QOL. The intervention also had a medium effect on one particular subscale of the QOLC-E, existential distress. The intervention apparently improved QOL, particularly through improving existential distress, which supports the theoretical notion that existential distress results primarily from a lack of meaning (Frankl, 2006; Murata & Morita, 2006; Saunders, 1988) and previous empirical findings that existential distress is alleviated by meaning-making (Breitbart et al., 2010; Henry et al., 2010). However, existential distress may be defined differently by other authors. In the current study, existential distress was measured by three items: hopelessness, powerlessness, and helplessness.

Of note, the proposed intervention was shown to improve global QOL as measured by a single-item scale. Although a single-item scale cannot completely replace a comprehensive multidimensional scale in measuring QOL (Stiel, Kues, Krumm, Radbruch, & Elsner, 2011), it represents a valid, reliable, and responsive measure of the construct (de Boer et al., 2004) and may be particularly useful when comprehensive assessment is not practical (Crane et al., 2006), as in the case of assessing patients who are seriously ill. A single-item scale also may be particularly useful when a variety of tools are used to measure the same construct, to ensure the construct validity of the tools as well as to make findings from different studies comparable.

A card-writing option was provided at the end of the intervention, which allowed participants to express sentiments to their significant others. However, only 9 of the 35 participants (26%) who received the allocated intervention took advantage of that opportunity. In

**Table 2. Summary Results of Repeated Measures Analysis of Covariance**

Scale	Intervention (N = 29)						Control (N = 29)						AD <sup>a</sup>	95% CI
	T1		T2		T3		T1		T2		T3			
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD		
QOLC-E subscale <sup>b</sup>														
Physical discomfort	7.3	1.9	7.7	1.4	7.7	1.6	7.1	2.3	7.6	1.9	7.3	2	0.1	[-0.6, 0.9]
Food-related concerns	5	3.1	6.2	2.7	6.3	2.8	5.9	2.8	5.9	3	5.3	2.9	1	[-0.2, 2.3]
Negative emotions	6.7	2.2	8	1.9	7.9	1.8	7.3	2.5	7.9	2	7.6	2.1	0.5	[-0.3, 1.3]
Sense of alienation	6.8	2	7.3	1.8	7.2	1.5	7.1	2	6.9	2.4	6.8	2.2	0.5	[-0.2, 1.3]
Support	6.7	1.8	7.3	1.7	7.4	1.3	7.2	2.1	7.7	1.8	7.8	2	0	[-0.6, 0.6]
Value of life	6.1	1.8	6.6	1.6	6.6	1.6	6.5	1.6	6.5	1.9	6.8	1.7	0.3	[-0.3, 0.8]
Existential distress	4.9	2.6	7	2.5	7.2	2.6	5.6	2.5	6.3	3.2	5.8	3.2	1.6*	[0.4, 2.8]
Healthcare concerns	6.1	1.7	6.6	1.5	6.5	1.6	6.7	1.6	6.6	1.4	6.7	1.4	0.1	[-0.5, 0.7]
QOLC-E total <sup>b</sup>	6.3	1.1	7.1	1	7.1	1.1	6.7	1.2	6.9	1.3	6.8	1.4	0.5*	[0.1, 1]
Single-item global QOL <sup>b</sup>	5.1	1.6	6.2	1.5	6.3	1.8	6.1	1.8	5.7	1.5	6	2.1	0.8*	[0, 1.6]

\* $p < 0.05$

<sup>a</sup> Each outcome measure was tested individually, with its corresponding baseline score used as a covariate.

<sup>b</sup> Scores ranged from 0–10 with higher scores representing better QOL.

AD—adjusted difference; CI—confidence interval; QOL—quality of life; QOLC-E—Quality-of-Life Concerns in the End-of-Life questionnaire; T1—baseline; T2—one day after intervention; T3—two weeks after intervention

addition, statistical tests failed to find any significant difference in any of the outcome variables between those who wrote cards and those who did not, and only two participants specifically talked about the experience of card writing during the postintervention interview. Card writing might not be how this population group channelled their expression of sentiments and card writing did not represent a necessary option for the Meaning of Life Intervention.

## Limitations

The current study has several limitations. The outcome assessor was not blinded to group assignment at postintervention assessments, which may have induced detection bias—assessment of the outcome could have been influenced by the knowledge of group assignment. Although measures had been taken to blind the assessor to group assignment before the evaluation interview at T3, the assessor, a nursing officer working in the study hospital, occasionally encountered a member of the research team when that individual administered the intervention at the participants' bedside.

The current study identified 129 eligible patients, 45 of whom (35%) refused to participate and whose level of QOL was unknown. The QOL of the 84 enrolled participants at baseline, as measured by the mean score of the QOLC-E total score and the single-item scale, was 6.2 (SD = 1.2) and 5.7 (SD = 1.8), respectively, where 10 was the highest score representing the most desirable situation. The study may have missed some patients who had a poor QOL and refused to participate. Also, those who completed the study had better QOL than those who dropped out at baseline as measured by the mean scores of the QOLC-E total score and three of its subscales—sense of alienation, existential distress, and healthcare concerns. As a result, the study findings may not be generalized to patients with relatively poor QOL compared to participants in this study. In the current study, 58 of the 84 enrolled participants (69%) completed the study and, therefore, the attrition rate was 31%. An attrition rate of 35% is commonly found in palliative care research (Palmer, 2004).

Because of the advanced-stage disease of the participants, this study only conducted outcome evaluations one day and two weeks after the intervention and failed to examine the long-term impact. Thirty-eight of the 84 enrolled participants (45%) had died by the end of the study period.

## Clinical and Research Implications

Unlike the use of particular physical or pharmacologic treatments that are disease stage-specific, psychotherapeutic interventions are usually applicable at all stages of a life-threatening disease, and some of these interventions, such as group or lengthy interventions, may be even more practical at an earlier disease stage. Accordingly, it may be more practical and useful to provide palliative care and conduct palliative care research during the earlier stages of an incurable disease so that a much greater variety of interventions will become feasible and their long-term impact empirically tested.

## Conclusion

The enhancement of QOL is the primary goal of palliative care. The current study represents an attempt to examine the effectiveness of an intervention in improving this primary outcome of palliative care. However, plenty of multidimensional instruments have been developed and used in research to measure QOL in different cultures and different target groups. In future palliative care research, together with a comprehensive scale on QOL, researchers should include a single-item scale on global QOL to make findings from different studies comparable.

The proposed intervention was only tested in the oncology ward of a single acute hospital in a small group of participants. Full-scale studies are needed to test its effectiveness in different settings and in patients at earlier stages of the disease trajectory.

The findings demonstrate that enhancing a sense of meaning during patients' dying process is related to their QOL. Nurses can use the Meaning of Life Intervention, which is feasible, relatively brief, and easy to implement, to enhance QOL and to alleviate existential distress of patients with advanced-stage cancer.

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