

Meaning-Making and Psychological Adjustment to Cancer: Development of an Intervention and Pilot Results

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Purpose/Objectives: To develop an intervention that uniquely addresses the existential impact of cancer through meaning-making coping strategies and to explore the intervention's impact on psychological adjustment.

Design: Descriptive, qualitative approach to develop the intervention; one-group pre- and post-test design to pilot test the intervention.

Setting: Patients' homes or ambulatory oncology clinics affiliated with a university health center in eastern Canada.

Sample: 18 participants who were newly diagnosed in the past three months ($n = 14$), had completed treatment ($n = 1$), or were facing recurrence ($n = 3$) of breast ($n = 10$) or colorectal ($n = 8$) cancer.

Methods: Data were collected during interviews using a prototype intervention for trauma patients, and content was analyzed on an ongoing basis to fit the needs of the cancer population. Pretest and post-test questionnaires were administered to determine the intervention's effect.

Main Research Variables: Meaning-making intervention (MMI), patients' background variables, disease- or treatment-related symptoms, and psychological adjustment.

Findings: The MMI for patients with cancer consisted of as many as four two-hour, individualized sessions and involved the acknowledgment of losses and life threat, the examination of critical past challenges, and plans to stay committed to life goals. At post-test, participants significantly improved in self-esteem and reported a greater sense of security in facing the uncertainty of cancer.

Conclusions: Findings suggest that meaning-making coping can be facilitated and lead to positive psychological outcomes following a cancer diagnosis.

Implications for Nursing: The MMI offers a potentially effective and structured approach to address and monitor cancer-related existential issues. Findings are useful for designing future randomized, controlled trials.

Although only a third of patients with cancer experience severe psychological distress (Derogatis et al., 1983; Farber, Weinerman, & Kuypers, 1984; Stefanek, Derogatis, & Shaw, 1987; Zabora, Brintzenhofesoc, Curbow, Hooker, & Piantadosi, 2001), guidelines for the delivery of optimal comprehensive cancer care are based on the premise that every patient at every stage of the disease experiences some degree of psychological discomfort (Council of the Canadian Strategy for Cancer Control, 2004; Holland, 1999, 2000). Existential distress, defined as the state of an individual confronting his or her own mortality arising from feelings of powerlessness, disappointment,

Key Points . . .

- Existential issues, which are a ubiquitous part of the cancer experience, are challenging to understand and often are left unrecognized and untreated.
- Meaning-making coping is characterized by a distressing but necessary confrontation with loss that, if followed by a plan to fulfill a life purpose, can lead to improved psychological well-being.
- A guided approach through the process of meaning-making is a potentially effective method to overcome and possibly grow from the repercussions of cancer.

futility, meaninglessness, remorse, death anxiety, and disruption with his or her engagement with and purpose in life (Kissane, 2000), appears to be a ubiquitous part of the cancer experience. Meaning-making coping increasingly is recognized as a possible mechanism by which existential concerns can be addressed (Coward, 1998, 2003; Folkman & Greer, 2000; Lee, Cohen, Edgar, Laizner, & Gagnon, 2004; Mullen, Smith, & Hill, 1993; Taylor, 2000).

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Digital Object Identifier: 10.1188/06.ONF.291-302

Conceptual Framework

Meaning-making coping refers to a multidimensional framework that includes the appraisal of cancer, the process of searching for order and purpose in life, and the outcome of positive adjustment (Lee et al., 2004; Park & Folkman, 1997). Although the search for order and purpose is associated with greater psychological distress (Mullen et al., 1993; Schnoll, Knowles, & Harlow, 2002; Taylor, 1993; Tomich & Helgeson, 2002; Vickberg, Bovbjerg, DuHamel, Currie, & Redd, 2000), the reconstruction of a world and self view that can assimilate or accommodate the repercussions of cancer is associated with an enhanced state of well-being (Bowes, Tamlyn, & Butler, 2002; Carpenter, Brockopp, & Andrykowski, 1999; Coward, 1990; Halstead & Hull, 2001; Lewis, 1989; Pelusi, 1997; Post-White et al., 1996; Richer & Ezer, 2002; Steeves, 1992; Taylor, 2000; Thompson & Pitts, 1993). Thus, meaning-making coping is characterized by a distressing but normative state of cognitive processing that ultimately can lead to positive outcomes.

Meaning-Oriented Clinical Interventions

Components of the meaning-making process commonly are embedded in psychological interventions that include supportive-expressive, cognitive-behavioral, or educational techniques. Supportive-expressive group therapy is rooted in the principles of existential psychotherapy and includes instruction on coping skills and effective communication with healthcare providers. Randomized, controlled trials of supportive-expressive group therapy have reported improved mood and decreased intrusive and avoidant symptoms in patients with metastatic breast cancer (Classen et al., 2001; de Vries et al., 1997; Goodwin et al., 2001; Spiegel, Bloom, & Yalom, 1981). Similarly, adjuvant psychological therapy addresses the personal meaning of cancer and focuses on learning cognitive-behavioral coping skills. Self-esteem, life satisfaction, anxiety, depression, fatigue, and confusion improved in samples of highly distressed patients with mixed cancer diagnoses (Bottomley, Hunton, Roberts, Jones, & Bradley, 1996; Greer, Moorey, & Baruch, 1991; Greer et al., 1992; Moorey & Greer, 1989; Moynihan, Bliss, Davidson, Burchell, & Horwich, 1998). Other interventions that combine meaning-making coping strategies with supportive-expressive or cognitive-behavioral approaches significantly improved life satisfaction, functional performance (Coward, 1998), sense of purpose in life (Coward, 2003; Zuehlke & Watkins, 1975), self-esteem (Edelman, Bell, & Kidman, 1999), and satisfaction with therapy (Kissane et al., 2003) and resulted in less mood disturbance (Coward, 1998; Edelman et al.). These interventions clearly demonstrate efficacy for improving emotional, functional, and treatment- or disease-related symptoms (Andersen, 1992; Devine & Westlake, 1995; Fawzy, Fawzy, Arndt, & Pasnau, 1995; Meyer & Mark, 1995; Trijsburg, van Knippenberg, & Rijpsma, 1992). However, because the interventions often are combined with meaning-making strategies, researchers have difficulty judging which outcomes can be attributed to any one therapeutic approach. The priority of intervention research now is to determine whether certain benefits are associated with specific components of an intervention (Cunningham, 2000; Edgar, Rosberger, & Collet, 2001; Fawzy et al., 1995; Meyer & Mark).

Despite theoretical (Lee et al., 2004) and clinical support (Ersek & Ferrell, 1994; Folkman & Greer, 2000; Ishiyama, 1990; O'Connor & Wicker, 1995) for the potential benefits of assisting patients with cancer in the search for meaning, interventions that are dedicated solely to the use of meaning-making coping strategies are only beginning to be developed and tested (Cole & Pargament, 1999; Greenstein, 2000; Greenstein & Breitbart, 2000). Linn, Linn, and Harris (1982) described the random assignment of 120 men with end-stage cancer to counseling sessions that focused on reminiscence and meaningful life activities or to a usual-care control group. Although greater life satisfaction, improved self-esteem, and a diminished sense of alienation were reported 3, 6, 9, and 12 months later for the experimental group, the intervention was described vaguely and did not permit replication. According to Chambless and Hollon (1998) and Waltz, Addis, Koerner, and Jacobson (1993), clinical interventions must be specific and defined clearly to permit assessments of treatment integrity and adherence, as well as future replications.

Purpose

The purpose of the current study was to develop and explore the psychological effects of an intervention that focused on meaning-making coping strategies for individuals with one of two types of cancer. The specific study questions were (a) What kind of meaning-making strategies help patients with cancer in their search for meaning? (b) Are patients with breast or colorectal cancer, or in a certain phase of the cancer trajectory, more likely to benefit from a meaning-making intervention (MMI)? (c) Which outcomes are most sensitive to change from an MMI? and (d) Which patient- or disease-related characteristics are associated with the greatest changes in outcomes following an MMI?

Factors Considered in Developing the Intervention

Appropriateness

Psychological interventions commonly are tested among patients with cancer without control for disease- and treatment-related variables, sociodemographic factors, or background differences (Bottomley et al., 1996; de Vries et al., 1997; Greer et al., 1992; Linn et al., 1982). The research evidence is mixed regarding the influence of such patient variables on the differential responses to psychological interventions. Gender, marital status, religious orientation, and education level did not influence who benefited from a group psychoeducational program (Cunningham, Lockwood, & Edmonds, 1993). Highly distressed patients appeared to benefit from the effects of adjuvant psychological therapy (Greer et al., 1991, 1992; Moynihan et al., 1998). Individuals with low self-esteem or low ego strength were shown to benefit from educational or coping skills interventions (Edgar, Rosberger, & Nowlis, 1992; Helgeson, Cohen, Schulz, & Yasko, 2000). However, women who reported low social support benefited from a peer discussion group, but women who initially reported being satisfied with their level of support appeared to deteriorate over time in physical functioning after hearing stories from other group members that may have caused them to reevaluate their existing social relationship as less supportive than originally perceived (Helgeson et al.).

Given the evidence that not all individuals benefit equally from a specific intervention, the influence of patient variables should be considered in the preliminary testing stages of a novel intervention.

Format

A large proportion of patients seeking psychological support prefer one format over another (i.e., group or individualized sessions) (Coward, 2003; Cunningham, 2000; Edgar et al., 2001; Gotay & Lau, 2002). The choice of format also may depend on the nature of the problem for which help is being sought. For example, group sessions may be appropriate and cost effective for educational content or teaching relaxation skills, whereas existential issues may be more acceptable and readily discussed in a one-on-one format that allows for greater sensitivity, pacing, and privacy (Edelman et al., 1999). Given the sensitivity of the topic and the mixed evidence regarding the efficacy of individualized versus group sessions (Cain, Kohorn, Quinlan, Latimer, & Schwartz, 1986; Edgar et al., 2001; Fawzy, Fawzy, & Wheeler, 1996), the current study's investigators first intended to explore the effects of a novel meaning-oriented intervention delivered in individualized sessions prior to examining its effects in a larger, group format.

Feasibility

Meaning-oriented interventions offered on a one-on-one basis may provide a practical approach to responding promptly to the needs of patients with cancer. Patient schedules may not coincide with open group sessions, or patients may need to wait until enough people are interested to begin specific closed, group sessions based on a particular patient or illness characteristic (e.g., groups geared only to males, young adults, or people with advanced cancer) (Cunningham, 2000; Edgar et al., 2001). The ambulatory outpatient setting, in which an increasing number of patients are receiving cancer care, also requires a treatment approach that is both acceptable to patients and realistic to healthcare providers in terms of duration and frequency of sessions. As a result, the current study was based on consideration of the fit, format, and feasibility of a novel intervention aimed at assisting the search for meaning following a diagnosis of cancer.

Methods

Study Population

Patients with breast or colorectal cancer at different phases in the disease trajectory from two university-affiliated hospitals in Montreal, Canada, were invited to participate. Patients with breast cancer were included because the meaning-making literature has focused mainly on women with breast cancer (Lee et al., 2004) and this population was available for study. Patients with colorectal cancer were included to explore the effect of an MMI on a different gender and cancer type than women with breast cancer. Patients who were within three months of a new diagnosis, one month of completed treatment, or one month of a recurrence of cancer and receiving either curative or palliative treatment were sought because these transition points are critical in the disease trajectory and can amplify a sense of existential vulnerability (Frank-Stromborg, Wright, Segalla, & Diekmann, 1984; Frost et al., 2000; Lethborg, Kissane, Burns, & Snyder, 2000; Mahon &

Casperson, 1997; Sadeh-Tassa, Drory, Ginzburg, & Stadler, 1999; Taylor, 1993; Weisman & Worden, 1976–1977, 1985). Additional inclusion criteria included fluency in English and being older than 18 years of age. Patients were excluded if cognitive acuity caused by psychiatric illness or brain metastases might interfere with informed consent or if participation was likely to be burdensome because of physical fatigue.

Intervention

An eight-session MMI that originally was developed to help trauma patients and their families come to terms with life-threatening critical injury (Grossman & Lee, 1998) served as a prototype for the development of an MMI for patients with cancer. The trauma intervention was based on the clinical philosophy that patients are motivated to engage in a collaborative process of exploration and self-discovery (Gottlieb & Rowat, 1987; Overholser, 1993a, 1993b), the transition theory (Bridges, 1980) that endings lead to beginnings following a period of distress and readjustment, and the cognitive processing theory (Creamer, Burgess, & Pattison, 1992) that the distress experienced during the period of readjustment is attributed to the occurrence of intrusive thoughts and avoidant behaviors as the mind attempts to integrate the trauma.

To refine the intervention for a cancer population, the initial participants received the intervention as originally intended for trauma patients (see Figure 1). As the intervention progressed, the areas of concern that repeatedly surfaced for patients with cancer were retained, purposefully explored, and validated with each subsequent participant. A process audit was completed and field notes were written immediately following each session to record impressions about which strategies were particularly effective or not effective and to determine a plan of action for the next session. At the beginning of each subsequent session, participants were encouraged to reflect on whether and how the last session affected them. Suggestions to improve the intervention were welcomed from the participants throughout the study. Consequently, all participants were engaged in discussions related to the process of searching for meaning. The topics and themes relevant to the cancer experience were shaped gradually and confirmed with the initial participants until the content and procedure achieved a consistent pattern.

Procedure

Approval for the qualitative and quantitative components of the pilot study was obtained from each hospital's research ethics board. A descriptive, exploratory approach was used to adapt the MMI for patients with cancer. A one-group pre- and post-test design was used to explore the impact of the MMI on psychological adjustment. A clinic nurse or an oncologist distributed a brief recruitment letter to eligible patients asking those who were interested to provide contact information so that a nurse researcher could explain the study in further detail. Patients who refused to participate were asked to anonymously provide a reason for their refusal and complete a demographic questionnaire.

Following written consent, all participants completed and returned a packet of pretest, baseline questionnaires. Participants then met individually with the nurse researcher (an experienced oncology nurse and doctoral candidate) in the patient's home or clinic setting to receive the MMI. All sessions were audiotaped. Personal insights, participant

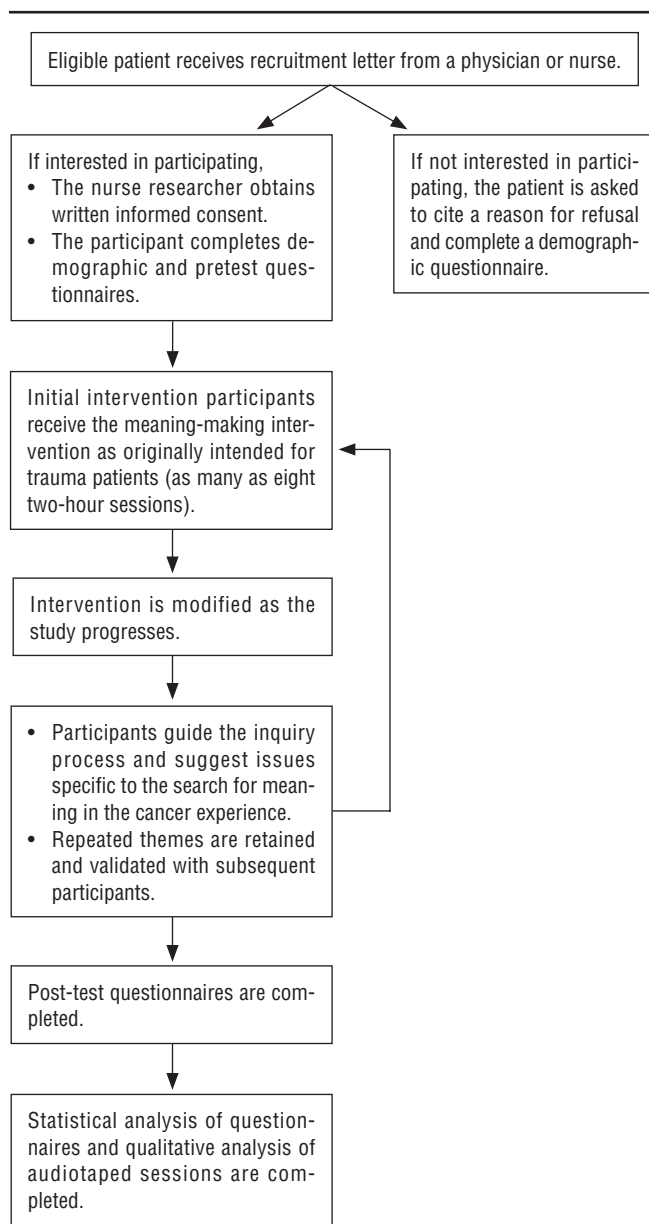


Figure 1. Flowchart of Method Used to Develop the Meaning-Making Intervention for Patients With Cancer

feedback, and contextual and clinical information were recorded in detailed field notes following each session. Post-test questionnaires were distributed immediately after the last session. Participants completed the post-tests within the next 24 hours and returned them to clinic staff in a sealed envelope or by mail to the researcher. Data collection was terminated when data saturation regarding the themes of the MMI was reached.

Instruments

Optimism, purpose in life, satisfaction with social network, physical functioning, symptom distress, and previous major life events were explored as possible background variables that might be influenced by the meaning-making process. For example, individuals who are less optimistic, unsure about their purpose in life, or perceive their social networks to be

unsupportive may benefit more from an MMI (Mullen et al., 1993; Taylor, 1993; Thompson & Pitts, 1993). The degree to which an individual's physical functioning is affected by cancer also may influence the degree to which meaningful goals can be attained (Thompson & Janigian, 1988; Thompson & Pitts). Major life events prior to the cancer diagnosis may be important in terms of how the cancer diagnosis is appraised and whether a person subsequently embarks on a meaning search (Park & Folkman, 1997; Tomich & Helgeson, 2002).

Both positive and negative outcomes were explored as a result of the MMI. Whereas depression, anxiety, sense of purpose in life, and psychological adjustment to illness have been shown to be responsive to change in other psychosocial oncology interventions (Bottomley et al., 1996; Greer et al., 1992; Taylor, 1993; Zigmund & Snaith, 1983), optimism, self-esteem, and cognitive processing (as indicated by intrusive thoughts and avoidant behaviors) may be sensitive to change as a result of the meaning-making process as suggested in theoretical models of meaning-making coping (Cella, Mahon, & Donovan, 1990; Curbow & Somerfield, 1991; Epping-Jordan et al., 1999; Green et al., 1998; Thompson & Pitts, 1993). The instruments used to measure the background and outcome variables have demonstrated adequate psychometric properties (see Table 1). With the exception of the Social Support Questionnaire (Sarason, Shearin, Pierce, & Sarason, 1987) and the Life Experiences Survey (Sarason, Johnson, & Siegel, 1978), all instruments have been used previously among patients with cancer. All self-report instruments were administered at pre- and post-test times, with the exception of the Social Support Questionnaire and the Life Experiences Survey, which were measured only once at baseline.

Information such as age, gender, employment status, family income, number of dependents, education, and use of adjuvant psychological services was provided by participants. Date of first anticancer treatment and the physiologic stage of disease were obtained by chart review.

Qualitative Analysis

A purposeful selection of half of the audiotaped interviews (e.g., long and short sessions, male and female patients, breast and colorectal cancer, different phases of the illness trajectory) was transcribed verbatim. Transcripts, audit forms, and field notes were content analyzed for recurring themes and then categorized according to the conceptual underpinnings from the meaning theory (Frankl, 1959; Park & Folkman, 1997), transition theory (Bridges, 1980), and cognitive processing theory (Creamer et al., 1992; Horowitz, 1992; Janoff-Bulman, 1989). The remaining audiotapes were used to validate the themes and categories that emerged and to ensure that data saturation had been achieved.

Statistical Analysis

To determine which outcome measurements were most sensitive to change as a result of the MMI, two-tailed, paired student t tests were performed on the pretest to post-test difference scores for each outcome. Pearson correlation coefficients were used to determine which background measurements were associated with outcomes showing significant change. Because of the low power associated with a small sample size to detect a change in scores, correlations greater than 0.4 were considered significant.

Table 1. Instruments Used to Measure Background and Outcome Variables

| Instrument and Author(s) | Description | Reliability | Validity |
|--|--|--|---|
| Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983) | Used to measure the level of anxiety and depression Self-report; seven items each for anxiety and depression subscales, scored on a four-point scale (0–3) Scores from 0–7 indicate normal, 8–10 indicate mild, 11–14 indicate moderate, and 15–21 indicate severe anxiety or depression for each subscale. | Reliability coefficients range from $\alpha = 0.90$ – 0.93 (Moorey et al., 1991). | Principal components analysis confirmed two factors (Moorey et al., 1991); correlated significantly with psychiatrists' ratings (Zigmond & Snaith, 1983) |
| Impact of Event Scale (Horowitz et al., 1979) | Used to measure cognitive processing as indicated by frequency of intrusive thoughts and avoidant behaviors Self-report; 15 items, scored on a four-point scale (0–3) Scores greater than 8.5 indicate high distress. | Reliability coefficients range from $\alpha = 0.78$ – 0.92 (Grossman et al., 1999); stable over time. Test-retest is one week; intrusion $r = 0.79$, avoidance $r = 0.89$, and total scale $r = 0.87$ (Horowitz et al., 1979). | Cluster analysis confirmed subscales (Horowitz et al., 1979); factor analysis confirmed item assignment to subscales (Zilberg et al., 1982). |
| Karnofsky Performance Status Scale (Karnofsky & Burchenal, 1949) | Used to measure the overall level of physical functioning Administered by an investigator; single item, scored from 0–100 | Inter-rater reliability Pearson $r = 0.89$; Kappa statistic = 0.53 (Schag et al., 1984). | Correlated with physician ratings ($r = 0.16$ – 0.51 , $p < 0.05$) (Schag et al., 1984) |
| Life Experiences Survey (Sarason et al., 1978) | Used to measure previous major life events; assesses the presence or absence of positive and negative major life events and the quality of those experiences Self-report; 47 items, seven-point scale (scored from -3 to $+3$) | Stable over time; test-retest is six weeks; $r = 0.63$ and $r = 0.64$ (Sarason et al., 1978). | Significantly correlated in expected directions for anxiety, personal maladjustment, and depression in students (Sarason et al., 1978) |
| Life Orientation Test–Revised (Scheier et al., 1994) | Used to measure optimism, a person's habitual style of anticipating favorable outcomes Self-report; 12 items, each scored on a five-point scale (0–4) Higher scores indicate greater optimism. | Reliability coefficients range from $\alpha = 0.84$ – 0.89 (Epping-Jordan et al., 1999; Thompson & Pitts, 1993). Stable over time; test-retest is four weeks; $r = 0.79$ (Carver et al., 1993; Scheier & Carver, 1987). | Factor analysis confirms the unidimensionality of optimism, which is positively correlated with internal control beliefs, self-esteem, and self-mastery and negatively correlated with depression, hopelessness, alienation, perceived stress, neuroticism, and trait anxiety (Scheier et al., 1994; Scheier & Carver, 1987). |
| Psychosocial Adjustment to Illness Scale–Self-Report (Derogatis, 1986) | Used to measure global adjustment to illness Self-report; 46 items (seven domains), scored on a four-point scale (0–3) Low scores indicate high adjustment. | Reliability coefficients range from $\alpha = 0.61$ – 0.92 (Merluzzi & Sanchez, 1997). | Factor analysis confirmed seven factors (Merluzzi & Sanchez, 1997); low intercorrelations among domain scores ($r = 0.28$ – 0.61) (Derogatis, 1986); significant correlations in expected directions with Karnofsky Performance Status Scale, social support, and coping (Merluzzi & Sanchez) |
| Purpose in Life Scale (Crumbaugh & Maholick, 1964) | Used to measure purpose in life, the extent to which individuals perceive their existence to have meaning and purpose Self-report; 20 items, each scored on a seven-point scale (1–7) Scores less than 92 indicate lack of life purpose, scores from 92–112 indicate uncertainty of life purpose, and scores greater than 112 indicate a clear life purpose. | Reliability coefficients range from $\alpha = 0.86$ – 0.92 (Lewis, 1982, 1989). | Significantly correlated with internal locus of control ($r = -0.35$) among patients with cancer and correlated with psychiatrists' ($r = 0.88$) and ministers' ratings ($r = 0.47$) (Crumbaugh & Maholick, 1964) |
| Rosenberg Self-Esteem Scale (Rosenberg, 1965) | Used to measure self-esteem, the degree of perceived self-worth Self-report; 10 items, scored on a four-point scale (1–4) High scores indicate lower self-esteem. | Reliability coefficients range from $\alpha = 0.77$ – 0.87 (Carpenter et al., 1999; Vinokur et al., 1989); stable over time. Test-retest is two weeks; $r = 0.85$ (Silber & Tippett, 1965). | Moderately correlated with Cooper-smith's Self-Esteem Inventory ($r = 0.60$) (Crandall, 1973) |

(Continued on next page)

Table 1. Instruments Used to Measure Background and Outcome Variables (Continued)

| Instrument and Author(s) | Description | Reliability | Validity |
|--|---|---|--|
| Social Support Questionnaire–Short Form (Sarason et al., 1987) | Used to measure the number and level of satisfaction with perceived support Self-report; six items, each scored on a seven-point scale (1–7) Higher scores indicate greater satisfaction with support. | Reliability coefficients range from $\alpha = 0.90$ – 0.93 ; stable over time. Test-retest is four weeks; $r = 0.90$ (Sarason et al., 1987). | Moderately correlated with the questionnaire's long form ($r = 0.37$ – 0.58) and highly correlated with other social support measures (Sarason et al., 1987) |
| Symptom Distress Scale (McCorkle et al., 1997) | Used to measure symptom distress, the degree of illness related to cancer or treatment Self-report; 13 items, scored on a five-point scale (1–5) Scores from 25–32 indicate moderate distress, and scores greater than 33 indicate severe distress. | Reliability coefficients range from $\alpha = 0.72$ – 0.92 ; stable over time. Test-retest is one month; $r = 0.78$ (McCorkle & Quint-Benoliel, 1983). | Significant differences between patients with lung cancer versus those with myocardial infarction (McCorkle & Quint-Benoliel, 1983) |

Results

Sample Characteristics

Of the 21 patients enrolled in the study, 18 completed all questionnaires (one patient died, one left the country, and one returned largely incomplete questionnaires). Table 2 describes the sample characteristics at baseline. The participants had a mean age of 57 years ($SD = 11.7$, range = 38–76 years), and most were female ($n = 13$, 72%), married ($n = 13$, 72%), living with a spouse and children ($n = 9$, 50%), employed full-time ($n = 11$, 61%), and high school ($n = 5$, 28%) or university ($n = 6$, 33%) educated. Eighty-three percent ($n = 15$) of the participants had not received professional counseling for their

situation with cancer. Fifteen (83%) participants were newly diagnosed with stage I ($n = 6$, 33%) or stage II ($n = 2$, 11%) breast cancer or stage I ($n = 1$, 6%) or stage II ($n = 6$, 33%) colorectal cancer. Three patients (17%) had a recurrence of cancer, and one patient (5%) had completed treatment. Because of a lack of resources, the investigators could not maintain a complete account of who was approached and who refused study inclusion. Some of the reasons cited for not participating included current involvement in support groups or lack of interest.

Qualitative Results

A consistent pattern of themes in the search for meaning in the cancer experience emerged by the fifth participant. The themes were organized as a series of three tasks, each being requisite to the next (see Figure 2). This content emerged as part of the responses of the participants. The tasks addressed an acknowledgment of losses associated with cancer, an examination of the mastery of past challenges, and plans to stay committed to life goals or form new goals. The first task helped participants to acknowledge the reality of present circumstances and distinguish between what was and what is and between what can and cannot be changed. Strategies were designed to help patients identify and explore the basis of their appraisal of cancer. The second task embedded the cancer experience in a familiar framework of significant life events. Strategies helped patients trace the development of automatic thoughts and beliefs they had about themselves and their capabilities and how the beliefs and thoughts facilitated or impeded their ability to integrate the experience of cancer. The third task introduced the idea of gaining wisdom from the individual's personal experience and was defined as the ability to make important life decisions in the face of uncertainty (Kitchener & Brenner, 1990). This task encouraged participants to highlight the challenges they already mastered in their cancer experiences since diagnosis, identify what gave their lives a sense of purpose, and initiate a plan that would enable living fulfilling lives with few regrets given the knowledge and changes brought on by cancer. Past "survival strategies" were examined for their ability to conquer present fears associated with the uncertainty of cancer.

Table 2. Baseline Characteristics of the Sample

| Characteristic | n | % |
|--|-----------------------------------|-----------|
| Cancer site | | |
| Breast | 10 | 56 |
| Colorectal | 8 | 44 |
| Stage | | |
| I | 7 | 39 |
| II | 8 | 44 |
| III | 3 | 17 |
| Phase of trajectory | | |
| Newly diagnosed | 14 | 78 |
| Completed treatment | 1 | 5 |
| Recurrence (with curative or palliative treatment) | 3 | 17 |
| Receiving counseling prior to study | | |
| Yes | 3 | 17 |
| No | 15 | 83 |
| Instrument | \bar{X} Score | SD |
| Symptom Distress Scale | 22.6 | 6.79 |
| Karnofsky Performance Status Scale | 84.3 | 14.50 |
| Social Support Questionnaire | | |
| Level of satisfaction | 33.4 | 4.20 |
| Number of supports | 3.6 | 1.82 |
| Life Experiences Survey | –1.2 | 6.54 |

N = 18

Task 1: Acknowledge the present.

Objective: to provide a secure context to revisit events since the cancer diagnosis

Rationale

1. Telling his or her story allows the patient to slowly accommodate and assimilate new and possibly threatening material.
2. Telling his or her story allows the patient to selectively revisit disturbing aspects in a controlled rather than random manner.
3. Understanding what happened to the self reestablishes a sense of order in the present.
4. Grieving for losses initiates the process of acceptance and growth.

Task 2: Contemplate the past.

Objective: to embed the new cancer experience within a familiar framework of past challenges

Rationale

1. Reflection on one's life acknowledges what previously was perceived as improbable and incompatible with one's understanding of the self and the world.
2. Intrusive thoughts and avoidant behaviors reflect the mind's way of challenging the natural tendency to resist change and maintain a sense of stability.
3. Reflecting on how past challenges were overcome may allow the patient to realize similarities and strengths that can be applied to the present challenge of living with cancer.

Task 3: Commit to the present for the future.

Objective: to reestablish a sense of commitment toward meeting attainable goals in the context of one's mortality

Rationale

1. Acknowledging one's mortality often serves as an impetus toward living or maintaining a meaningful life in the present.
2. Acknowledging one's mortality helps rearrange life priorities.
3. Acknowledging one's mortality allows personal decisions to be made with more clarity.

Figure 2. Objectives for Meaning-Making Intervention for Cancer

The order of the tasks was important to maintain so that participants could build a sense of security and preparedness to address the more distressing or fearful aspects of their situation and to be sensitive to the different levels of readiness to learn or benefit from the situation. The objective facts and symptoms of the disease were distinguished and clarified prior to exploring the fearful thoughts and beliefs they had about the future or themselves. Whenever possible, the patient's words, metaphors, or analogies were used to strengthen a sense of connectedness and understanding.

Overall, patients participated in three to eight sessions on a daily, weekly, or monthly basis that ranged from 10 minutes to three hours in length. The frequency and duration of each session varied to accommodate different levels of patient readiness, variability in medical treatment schedules, and physical status. To continue to provide patients with flexibility in scheduling and readiness, the intervention for patients with cancer was finalized to include as many as four two-hour sessions, based on the median number and length of sessions suggested by the pilot study. Thus, depending on each participant's needs, each task could be completed in a separate session or three tasks could be completed in one session. The MMI for patients with cancer is documented in a 35-page procedure manual (Lee,

2004) and includes the rationale for the timing and sequencing of the strategies, an audit tool to monitor the process and themes in each session, and a lifeline exercise that asks the patient to list and order past critical life events and future expectations. The lifeline exercise appeared to best facilitate the storytelling approach and chronologically embedded the cancer experience within a familiar context of past life events.

Participant Feedback

A general consensus existed among the participants that they valued the opportunity to talk freely about the emotional toll and social impact of cancer on their lives. Only one participant remained guarded in sharing his personal experience, preferring to speak in abstract philosophical terms and describing the intervention as "entertaining, a way to pass the time during chemo." Interestingly, this individual improved across all outcomes but showed a dramatic 10-point increase in self-esteem, which corresponds to a 32% change on the scale range of 0–31, as well as an eight-point increase in purpose in life, or a 7% change on the scale range of 0–121.

The importance of allowing sufficient time to grieve the losses associated with cancer prior to focusing on the possibility of learning from the cancer experience was highlighted in discussions with the second participant, who was the only one to show a consistent although slight decline across all outcomes and a decrease in self-esteem. Focusing too early on the positive outcomes of the search for meaning may unintentionally invalidate the normal reactions and emotions associated with learning about a serious threat to life. After the sequence of tasks and issues to address were defined, a greater sense of "security to face the future with less fear" became a prominent and recurring theme in the feedback from several participants. This was interpreted by the authors as an improved sense of self-efficacy that has been defined as the belief in one's own ability to respond to novel or difficult situations and to deal with any associated setbacks (Schwarzer, 1992).

Statistical Results

Insufficient data prevented subgroup analyses for cancer site or phase of cancer trajectory. Table 3 presents the means and standard deviations of the main outcome measurements. Analyses for the Psychosocial Adjustment to Illness Scale–Self-Report were not completed because of the large number of missing responses from two-thirds of the participants; some of the scale's items were deemed irrelevant or the length of the questionnaire was considered burdensome by the participants. At post-test, self-esteem significantly improved by 2.4 points (paired *t* test = 3.53, *p* = 0.003), which corresponds to an 8% change on a 30-point scale range for the Rosenberg Self-Esteem Scale and more than half of the standard deviation considered clinically meaningful in the absence of other validity data (Norman, Sloan, & Wyrwich, 2003). Although nonsignificant, a trend existed toward a greater sense of purpose in life following completion of the MMI. No significant differences were found between the pre- and post-test scores for anxiety, depression, optimism, or intrusiveness and avoidance behaviors.

Table 4 presents the correlations between the background variables and the pre- and post-test difference scores. Two background variables were related to changes in self-esteem. Participants with a smaller support system (*r* = −0.45) or who reported greater symptom distress at baseline appeared to show greater improvements in self-esteem (*r* = −0.55).

Table 3. Means and Standard Deviations of Main Outcome Measurements at Baseline and Postintervention

| Measure | Pretest (N = 18) | | Post-Test (N = 14) | | Paired T Test | p |
|---|------------------|-------|--------------------|-------|---------------|-------|
| | \bar{X} | SD | \bar{X} | SD | | |
| Rosenberg Self-Esteem Scale | 16.83 | 3.11 | 14.50 | 3.57 | 3.53 | 0.003 |
| Hospital Anxiety and Depression Scale total | 7.94 | 4.71 | 7.11 | 5.27 | 0.34 | 0.74 |
| Purpose in Life Scale | 114.90 | 11.98 | 118.83 | 14.51 | −1.55 | 0.14 |
| Impact of Event Scale total | 28.39 | 10.61 | 29.06 | 12.82 | −0.49 | 0.63 |
| Life Orientation Test–Revised | 25.28 | 3.74 | 25.93 | 3.54 | −2.30 | 0.03 |

Important correlations with some of the outcomes whose pre- and post-test changes in score did not obtain significance suggest that some background characteristics might be associated with changes as a result of the MMI. Having fewer major life events in the past year ($r = -0.42$), greater symptom distress ($r = 0.58$), less satisfaction with social support ($r = -0.48$), and less initial clarity about purpose in life ($r = -0.41$) was correlated with greater pre- and post-test differences for anxiety and depression following the intervention. Worse physical status at baseline was correlated with a greater increase in sense of purpose in life ($r = -0.49$) following the intervention.

Discussion

This article describes the development of an MMI that used both an inductive approach based on the insights of patients currently experiencing cancer and its treatment and a deductive approach based on several theoretical and clinical models of coping with major life events. Overall, the findings suggested that levels of self-esteem and self-efficacy improved for the newly diagnosed patients with breast or colorectal cancer who participated. However, because the pilot nature of the study was intended only to suggest trends in variables, further testing using a randomized, controlled trial design is warranted prior to drawing any conclusions about the MMI's efficacy and effectiveness.

Self-esteem significantly improved for participants who were as early as three months postdiagnosis and receiving chemotherapy. This is a particularly important preliminary

finding because it suggests that strategies for meaning-making coping may buffer the impact of cancer on self-esteem early in the trajectory. Self-esteem has been shown to decline following a diagnosis of cancer (Revenson, Wollman, & Felton, 1983) and particularly during active chemotherapy treatments (Carpenter & Brockopp, 1994; Ward, Leventhal, Easterling, Luchterhand, & Love, 1991). However, in view of this study's noncontrolled design, further examination is warranted to determine whether the increase in self-esteem was a result of the intervention, a function of time, or because of another mediating variable.

A greater sense of security to cope with an uncertain future emerged as a recurring theme that was interpreted as an improved sense of self-efficacy. Perhaps the second task, which highlighted the mastery of past challenges and encouraged reflection about the potential transferability of past coping strategies to the present situation, may have improved the belief that patients can manage uncertain and unforeseen events related to cancer. Future studies that employ a randomized, controlled trial design would provide further evidence as to whether certain components of the MMI may alter patients' perceptions of self-efficacy.

The coping processes that promote positive meaning may be key to balancing the inevitable losses and negatives that result from a compromised physical condition (Cohen & Mount, 2000; Folkman & Greer, 2000; Kagawa-Singer, 1993). In the current study, poor physical status was associated with a greater increase in purpose in life. The scores on the optimism scale for the three participants being treated for recurrence of cancer increased dramatically by four or five points (representing 12%–15% of the scale range), whereas the other 15 participants had a mean increase of one point (3% of the scale range). Past research shows that optimism is mediated by adaptive coping strategies such as meaning-making coping (Epping-Jordan et al., 1999; Taylor, 1993) and is a psychosocial correlate of adjustment (Carver et al., 1993; Lauver & Tak, 1995; Schnoll et al., 2002). Talking to patients about death, dying, and other existential concerns has been shown not to be harmful but frequently helpful (Emanuel, Fairclough, Wolfe, & Emanuel, 2004). Further studies might consider how the realistic examination of existential concerns influences a sense of optimism and whether this type of coping strategy can mitigate some of the negative repercussions associated with cancer and its treatment.

Clinical Implications

Controlled intervention trials are needed to confirm the preliminary findings of the present pilot study prior to the

Table 4. Correlations Among Background Variables and Pre- and Post-Test Difference Scores

| Variable | Pre- and Post-Test Difference Scores | | | | |
|-------------------------------|--------------------------------------|-------|-------|-------|-------|
| | RSES | LOT-R | HADS | IES | PIL |
| Life experiences | 0.06 | −0.20 | −0.42 | 0.39 | −0.36 |
| Optimism | −0.15 | – | 0.02 | −0.11 | 0.05 |
| Symptom distress | −0.55 | 0.19 | 0.58 | 0.06 | −0.26 |
| Physical functioning | −0.33 | 0.29 | 0.27 | 0.35 | −0.49 |
| Social support (number) | −0.45 | 0.10 | −0.23 | −0.26 | −0.11 |
| Social support (satisfaction) | −0.03 | −0.15 | −0.48 | 0.32 | 0.17 |
| Purpose in life | 0.39 | 0.05 | −0.41 | −0.01 | – |

HADS—Hospital Anxiety and Depression Scale; IES—Impact of Event Scale; LOT-R—Life Orientation Test–Revised; PIL—Purpose in Life Scale; RSES—Rosenberg Self-Esteem Scale

broader clinical application of the MMI. Although the uptake of research innovations into practice is a complex interplay of many factors (Kitson, Harvey, & McCormack, 1998), the structure of the MMI can be tailored to a variety of clinical situations that would facilitate its implementation into nursing practice. For example, nurses may use the strategies in the MMI to initiate discussions with patients while simultaneously performing more task-oriented procedures, such as tending to wound care or hygiene or during the administration of IV infusions. Patients with little difficulty or who have no need to engage in the search for meaning may require only a single session to reinforce or highlight the strategies used and the wisdom gained during their experiences. These patients may be identified in the first session by the readiness and immediacy in which they recount their beliefs and self-reflect about their situations and the ease in which they complete the three tasks. By contrast, other patients may require more time to integrate their experiences, and follow-up sessions can be scheduled to coincide with patients' next treatment appointments.

In ambulatory care settings, patients often are treated by a different nurse at each appointment. Similarly, coping strategies vary across patients and within patients over time. The MMI provides a structured format and dedicated space to document nursing interventions related to the assessment and evaluation of how patients are coping with their experiences of cancer over time. The availability of audit forms in the MMI also would enable different nurses to continue or follow-up on the discussion when the last session ended.

This study found psychological improvements in a sample that was considered to be functioning relatively highly and not clinically distressed at baseline, suggesting that the MMI may offer an acceptable approach for nurses to address existential concerns that may become a part of routine comprehensive cancer care. Alternatively, in an era of cost containment, the present findings also offer suggestions as to which subgroups may be targeted for intervention. For example, people who report greater physical distress, lack a strong support network, or are unclear about their purpose in life may be considered at higher risk for distress and subsequent health outcomes. Further exploration is necessary to confirm these hypotheses. Finally, although the present study was piloted among patients

with cancer, the MMI may have potential for helping patients cope with other acute, life-threatening, or chronic illnesses. Hopefully, the clinical application of the MMI will be evaluated further with other patient populations.

Limitations

The present findings need to be interpreted in the context of several study limitations. The small convenience sample composed mainly of newly diagnosed, female, Caucasian participants suggests that the MMI requires further validation among patients who are male, from other cultures, and in other phases of the illness trajectory. A control group that does not receive the intervention should be considered for inclusion to determine, with more certainty, whether the changes in self-esteem, optimism, and self-efficacy were a result of the MMI or maturational processes over time. Positive outcomes also can be derived from the effects of the attention received simply by participating in a research study (Hutchinson, Wilson, & Wilson, 1994; MacCormack et al., 2001). Thus, a second control group that receives nontherapeutic visits or behavioral relaxation training may be worthwhile to consider as a comparison to the experimental group.

Conclusion

Existential therapeutic approaches may confer the greatest psychological benefits, but they demand a greater willingness on the part of the patient to engage in intense self-exploration (Cunningham & Edmonds, 1996). The current study developed a novel approach to exploring existential issues in an ambulatory care setting that was well received by a clinically nondistressed sample. Preliminary analyses suggest that the intervention may help to mitigate some of the understandable negative reactions and emotions that are associated with the threat to life by a cancer diagnosis. Further testing of the MMI in a randomized, controlled trial would provide more definitive answers as to its efficacy and effectiveness.

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