

Change in Emotion-Regulation Strategy for Women With Metastatic Breast Cancer Following Supportive–Expressive Group Therapy

Janine Giese-Davis, Cheryl Koopman,
Lisa D. Butler, Catherine Classen,
and Matthew Cordova
Stanford University School of Medicine

Pat Fobair
Stanford Hospital and Clinics

Jane Benson, Helena C. Kraemer, and David Spiegel
Stanford University School of Medicine

Four relatively independent emotion-regulation constructs (suppression of negative affect, restraint, repression, and emotional self-efficacy) were tested as outcomes in a randomized trial of supportive–expressive group therapy for women with metastatic breast cancer. Results indicate that report of suppression of negative affect decreased and restraint of aggressive, inconsiderate, impulsive, and irresponsible behavior increased in the treatment group as compared with controls over 1 year in the group. Groups did not differ over time on repression or emotional self-efficacy. This study provides evidence that emotion-focused therapy can help women with advanced breast cancer to become more expressive without becoming more hostile. Even though these aspects of emotion-regulation appear trait-like within the control group, significant change was observed with treatment.

A long-standing hypothesis links suppressed, repressed, or dysregulated emotional expression with greater incidence and faster progression of cancer (see Giese-Davis & Spiegel, in press; Gross, 1989; McKenna, Zevon, Corn, & Rounds, 1999; Spiegel & Kato, 1996, for reviews). Given this controversial literature, our research focus seeks to clarify which emotion-inhibition phenomena may be dangerous to cancer patients (Giese-Davis & Spiegel, 2001) and whether therapy can change emotion-regulation strategy in ways that mediate survival. Spiegel, Bloom, Kraemer, and Gottheil (1989) and several others (Fawzy et al., 1993; Richardson, Shelton, Krailo, & Levine, 1990) have found survival effects for cancer

patients following participation in group therapy. However, no one has reported the ability to change emotion-regulation strategies and linked that change with survival (Giese-Davis & Spiegel, in press). Emotion-focused group interventions for cancer patients may be particularly effective in facilitating these changes. In a first step toward testing these hypotheses, this study evaluated the impact of supportive–expressive therapy (SET) on four aspects of affect regulation, suppression, restraint, repression, and emotional self-efficacy, in women with metastatic breast cancer.

Empirical evidence supports distinctions between the suppression of negative emotions, restraint of aggressive actions, confidence in one's emotional expression skill, and repressive defensiveness (L. A. King & Emmons, 1991; L. A. King, Emmons, & Woodley, 1992; Kring, Smith, & Neale, 1994; Pettingale, Watson, & Greer, 1985; Roger & Nesshoever, 1987; Watson & Greer, 1983; Weinberger, 1990a; Weinberger & Davidson, 1994; Weinberger & Schwartz, 1990). In the same sample of women used for the present study, we recently demonstrated that suppression, restraint, and repression were separable in a factor analysis and that—without intervention—these constructs remained relatively stable over 1 year in a multitrait, multioccasion matrix (Giese-Davis & Spiegel, 2001). In this earlier article, we more thoroughly reviewed construct distinctions.

Suppression is viewed as a defense mechanism in which a person “intentionally avoids thinking about disturbing problems, desires, feelings, or experiences” (*Diagnostic and Statistical Manual of Mental Disorders*, 4th ed.; *DSM-IV*; American Psychiatric Association, 1994, pp. 756–757). Temporary suppression during an inconvenient moment is viewed as a sign of healthy adjustment (Valliant, 2000; Vaillant & Vaillant, 1990). However, this ability may be distinguishable from the chronic suppression of negative

Janine Giese-Davis, Cheryl Koopman, Lisa D. Butler, Catherine Classen, Matthew Cordova, Jane Benson, Helena C. Kraemer, and David Spiegel, Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine; Pat Fobair, Department of Radiation Oncology, Stanford Hospital and Clinics, Stanford, California.

Portions of this study were presented at the annual conference of the Society for Behavioral Medicine, Nashville, Tennessee, April 2000, and at the 5th World Congress of Psycho-Oncology, Melbourne, Victoria, Australia, September 2000. This study was made possible by National Institute of Mental Health Grants MH47226 and MH47226-11, with additional funding from the National Cancer Institute, the MacArthur Foundation, and California Breast Cancer Research Program Grants 1FB-0383 and 4BB-2901. We appreciate the contributions of Elaine Miller, project director; Sue Dimiceli, data analyst; and Sharon Foster, who made helpful suggestions on earlier versions of this article. We are indebted to the women who made this work possible.

Correspondence concerning this article should be addressed to Janine Giese-Davis, Department of Psychiatry and Behavioral Sciences, 401 Quarry Room 2318, Stanford University School of Medicine, Stanford, California 94305-5718. E-mail: jgiese@stanford.edu

affect associated with susceptibility to negative mental health (Classen, Koopman, Angell, & Spiegel, 1996; Stanton, Danoff-Burg, et al., 2000) and physical health outcomes (Derogatis, Abelloff, & Melisaratos, 1979; Julius, Harburg, Cottington, & Johnson, 1986; Temoshok & Fox, 1984).

L. A. King and Emmons (1991) and Roger and Nesselrover (1987) have argued that suppression of primary negative affect differs from the suppression of aggression. The primary negative affects of anger, sadness, and fear or anxiety (Ekman & Friesen, 1975; Greenberg & Safran, 1989) have physiological substrates (Gray, 1982; Panskeep, 1982; even in animals), are cross-culturally present in facial affect (Ekman, 1972; Izard, 1977), and are thought to represent adaptive survival and signaling emotions that allow a person to be aware that movement or change is necessary (Izard, 1977; Lang, 1985; Panskeep, 1992).

Suppression of anger differs from the behavioral restraint of aggressive impulses not only in the affect that is restrained but also in the meaning and long-term consequences of unrestrained behavior. Weinberger conceptualized restraint as the ability to inhibit immediate, self-focused impulses in the interest of other, long-term goals (Feldman & Weinberger, 1994, p. 196). Weinberger's Restraint scale is strongly negatively correlated with a measure of overt aggression and of delinquency (Weinberger & Schwartz, 1990), indicating that it may broadly measure skills involved in the restraint of hostility. Restraint of hostile, impulsive, irresponsible, and thoughtless behavior is positively associated with quality of life, lower levels of distress (Honig, Hofman, Rozendaal, & Dingemans, 1997; L. A. King & Emmons, 1991), and better social functioning (Weinberger & Schwartz, 1990). Studies also have found negative health effects for high levels of hostility (i.e., lack of restraint; Adams, 1994; Barefoot, Dahlstrom, & Williams, 1983; Barefoot, Dodge, Peterson, Dahlstrom, & Williams, 1989; Dembroski, MacDougall, Costa, & Granditis, 1989; Koskenvuo et al., 1988; Shekelle, Gale, Ostfeld, & Paul, 1983; Williams et al., 1980).

Repression is viewed as a defense mechanism in which the person is "unable to recall or be cognitively aware of disturbing wishes, feelings, thoughts, or experiences" (*DSM-IV*, pp. 756–757). Repressors are identified through an unusual grouping of symptoms (see Giese-Davis & Spiegel, 2001; Weinberger, 1990a) including abnormally low reports of distress simultaneous with high physiological arousal. Repression is the most consistent predictor of incidence of breast cancer (McKenna et al., 1999) and may predict faster progression (Jensen, 1987).

Emotional self-efficacy is a relatively new and understudied concept. Salovey and colleagues (Salovey & Mayer, 1990; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995) argued that emotion-regulation skills may impact quality of life. We have combined self-efficacy (Bandura, 1977), emotional intelligence, and existential therapy theories to propose that emotional self-efficacy for coping with a life-threatening illness can be measured and may change as a result of therapy (Giese-Davis et al., in press).

Changes in emotion-regulation and expression may be demonstrable therapy outcomes. Many models of psychotherapy assume that emotional expression is a necessary, but not sufficient, step toward greater psychological integration and interpersonal effectiveness, should result in decreases in psychopathology (Daldrup, Engle, Holiman, & Beutler, 1994; Gendlin, 1969; Greenberg & Safran, 1984; Linehan, 1993; Mahrer, 1986; Perls, Hefferline, &

Goodman, 1951; Reich, 1949; Rogers, 1951), and should allow for a "corrective emotional experience" (Yalom, 1980). Research has shown that catharsis alone is rarely as effective as emotional expression within a cognitive or meaning framework. Such a framework allows a client to form a coherent schema and ultimately to increase the meaning of his or her experiences (Greenberg, Ford, Alden, & Johnson, 1993; Greenberg & Safran, 1989; Greenberg, Wortman, & Stone, 1996; Klein, Mathieu-Coughlan, & Kiesler, 1986; see McCallum, Piper, & Morin, 1995, for a review).

Greenberg and Foerster (1996) argued that primary emotions (fear, sadness, anger; Greenberg & Safran, 1989) are fundamentally adaptive and that accessing them in therapy activates a schematic structure making it available for restructuring. Treatment seeks to move toward ownership and expression of underlying primary negative affect gradually reducing or transforming the expression of aggressive, irresponsible, or inconsiderate impulses (Daldrup et al., 1994; Greenberg, 1993; Greenberg & Webster, 1982). This transformation can lead to greater understanding of self and others (Greenberg & Foerster, 1996; Greenberg et al., 1993; Greenberg & Webster, 1982; S. King, 1988; Koch, 1983). It can also lead to a decrease in hostility (Greenberg et al., 1993), greater self-confidence and assertion (Greenberg & Foerster, 1996; S. King, 1988), greater positive affect (Koch, 1983; McCallum et al., 1995), and better physical health and physiological functioning (see Salovey, Rothman, Detweiler, & Steward, 2000, for a review). Of importance, greater intensity of emotional arousal during therapy sessions may mediate this transformation (Mohr, Shoham-Salomon, Engle, & Beutler, 1991; Rice & Saperia, 1984; Watson, 1996). Learning these skills in the context of group therapy may also lead to facility with the expression of strong emotion while not alienating others in interpersonal relationships.

Despite the hypothesized importance of emotional expression, few therapy outcome studies have examined changes in emotional expression or regulation strategies (Marshall, 1972). Past emotion outcomes include greater expression (Wagner, 1968), greater affiliative expression (Greenberg et al., 1993; Koch, 1983), and an increased ratio of "affect-expression-to-defense" (Taurke et al., 1990). A relationship-skills group for men increased expression and concordance between self-report and behavior (Moore & Haverkamp, 1989). Mothers and their children also more accurately interpreted emotional expression following training (Free, Alechina, & Zahn-Waxler, 1996). Last, "expressed emotion" researchers have argued that reducing hostile family expression lowers relapse rates in psychotic patients (Honig et al., 1997; Rund, Oie, Borchgrevink, & Fjell, 1995). Although these outcome studies imply that emotional expression change is possible, change in inhibition or regulation strategy has not been assessed.

SET for cancer patients may be particularly likely to change emotional expression and regulation. SET grew out of existential psychotherapy, with a focus on existential concerns of death anxiety, isolation, responsibility, choice, and meaning (Yalom, 1980). Direct processing of group members' deaths intensifies emotional experiences, allowing participants to practice and gain skill at tolerating negative affect in the moment. We hypothesized that SET would decrease suppression because therapists deliberately encourage expression of anger, fear, and sadness (Classen et al., 1997) regarding the cancer. We also hypothesized that participants would increase their restraint of hostile, inconsiderate, irresponsible, and aggressive impulses and behavior. In this way we hoped

to demonstrate the complex distinctions inherent in the emotional expression and processing encouraged in the SET model. We tested the treatment's effect on reducing repression, although no prior study has found that it is amenable to change. Last, we hypothesized that emotional self-efficacy would increase over time compared with the control group.

Method

Eligibility and Recruitment

Participants included 123 women with metastatic and 2 women with recurrent breast cancer. Participants were recruited between 1991 and 1996 (see Classen et al., 2001, for a thorough description of participants). One hundred fifty-five women initially entered the study, but 30 of these women dropped out before randomization because of the progression of their disease ($n = 12$), changing their minds about participating ($n = 11$), and being found to be ineligible on the basis of their medical records ($n = 7$), leaving 125 women randomized into the study.

All participants gave written informed consent. Women were included in the study if they had documented metastatic or recurrent breast cancer but excluded if they had a Karnofsky score of less than 70 (Karnofsky & Burchenal, 1949; a score of 70 indicates that the patient is able to care for herself but unable to engage in normal activity or do active work). All participants lived in the greater San Francisco Bay area, were English speaking, and were able to complete questionnaires. Women were excluded if they did not have metastasis beyond positive supraclavicular lymph nodes at the time of diagnosis, had active cancers within the past 10 years (other than breast cancer, basal cell or squamous cell carcinomas of the skin, in situ cancer of the cervix, or melanoma with a Breslow depth below 0.76 mm), or had any other current medical conditions that could affect survival in the short term.

Intervention

Participants randomized to the treatment condition were guaranteed 1 year of group therapy and encouraged to remain for at least a year. The therapy groups met on a weekly basis for 90 min. Because participants were recruited on an ongoing basis over 6 years, women randomized to the treatment condition would join one of the three existing groups. Two of these groups are still ongoing and have been meeting for as long as 10 years. Participants have been invited to remain in their group for as long as they desired. Most women in the intervention condition chose to continue in the groups for as long as their health permitted, and some of these women have been in the groups from their inception.

The therapy sessions were co-led by a psychiatrist, psychologists, and social workers. These therapists were trained using a manualized protocol (Spiegel & Spira, 1991) and were supervised on an ongoing basis by psychiatrists David Spiegel and Irvin Yalom. The SET model involved the creation of a supportive environment where participants were encouraged to express difficult emotions (particularly fear, anger, and sadness), confront their problems, strengthen their relationships, and find enhanced meaning in their lives—all factors that would serve to counter feelings of isolation. The intervention was unstructured, with therapists trained to facilitate discussion themes as the material emerged and in an emotionally expressive rather than didactic format. The group therapy content included (a) building bonds of social support; (b) expressing emotions; (c) facing fears of dying and death, including grieving the deaths of group members; (d) reordering life priorities; (e) improving support from and communication with family and friends; (f) integrating a changed self and body image; (g) improving communication with physicians; and (h) learning self-hypnosis for pain and anxiety control (Spiegel, 1991). Facilitation of existential topic discussions may have increased emotional arousal allowing therapists to help these women problem solve while in the midst of

intense emotions. Because there was always a range of style of emotional expression in any group, there were some women who appeared to model open emotional expression, whereas others modeled appropriate restraint. Women were encouraged to expand their social network, be role models for each other in coping with the illness, and provide concrete help to others in a similar situation. Leaders kept members focused on issues central to their diagnoses of metastatic breast cancer and on facing and grieving their losses.

As a manipulation check, we assessed the importance of typical group change factors (Lieberman & Borman, 1980) for 23 of the women participating in the treatment group. Participants rated the importance of typical group experiences on a 5-point Likert-type scale with 23 items. Using mean ranks by individual of the six subscales of this Group Experience Scale (Giese-Davis & Spiegel, 1995), we found that participants rated Expressing True Feelings as the most important group experience (Expressing True Feelings, $M = 5.07$; Gaining Access to Resources, $M = 4.09$; Support and Encouragement, $M = 3.64$; Discussing Sexual Concerns, $M = 3.18$; Developing a New Attitude, $M = 2.66$; Establishing Social Contact, $M = 2.36$).

Educational Control

All participants (including women randomized to the intervention condition) were offered educational materials after each assessment. They were given access to books, pamphlets, videotapes, and audiotapes dealing with a broad range of topics pertaining to breast cancer. This literature covered medical issues, treatment side effects coping, emotional coping, social support, personal stories of living with cancer, photography, poetry, and artwork. Participants were invited to take any of this material home on loan. They were also provided a 1-year membership to a consumer health library in their community.

Measures

Randomization and timing of assessments. Baseline assessments included self-report measures of social support, distress, coping, and physical activity. Samples of blood and saliva were also collected to assess immune and endocrine function. After completing the baseline assessment, Hannigan and Brown's (1982) adaptive randomization-biased coin-design method was used to ensure participants in the treatment and control conditions did not differ on medical status. The adaptive randomization program used the following variables to adjust the odds ratios from 50:50 to 45:55 or 40:60 if cells were becoming unbalanced across group sites: (a) dominant site of metastasis at time of study entry (chest wall—regional lymph nodes, bone, viscera), (b) estrogen receptor status at initial diagnosis (positive, negative, unknown), (c) disease-free interval (time from initial diagnosis of breast cancer to first metastasis/recurrence; less than 1 year, 1–3 years, more than 3 years), (d) age at study entry (less than 50 years, 50 years or more), (e) systemic treatment received since metastasis (none, chemotherapy only, hormonal therapy only, chemotherapy and hormonal therapy), and (f) institution (Stanford Oncology Day Care, Kaiser Medical Center, or community oncologist). Randomization resulted in 64 women being randomized to the intervention group and 61 women to the control group. There were three sites, with one group meeting at each (San Jose, CA; San Francisco; and Stanford, CA), and control participants were placed into cohorts in each of these three sites on the basis of their geographic location.

For the first year, postbaseline assessments were conducted every 4 months. After participants were in the study for 1 year, assessments were reduced to once every 6 months.

Suppression of affect. The Courtauld Emotional Control Scale (CECS; Watson & Greer, 1983) is a 21-item questionnaire measuring the extent to which individuals report that they "smother" or "bottle-up" feelings of anger, sadness, and fear. Subscales are consistent with these primary

emotions: Anger Control (“When I feel angry [very annoyed] *I keep quiet or I refuse to argue or say anything*”), Depression Control (“When I feel unhappy [miserable] *I smother my feelings or I put on a bold face*”), and Anxiety Control (“When I am anxious [worried] [reversed] *I let others see how I feel or I bottle it up*”). We chose to use this measure in our study because it was specifically designed for women with breast cancer. Coefficient alpha for the current sample at baseline was .95 for the total scale with the following subscale alphas, .93 for Anger Control, .90 for Depression Control, and .91 for Anxiety Control. Within the first year, participants completed the CECS four times.

Restraint and Repressive-Defensiveness. The Weinberger Adjustment Inventory (WAI; Weinberger, 1990a, 1990b, 1997; Weinberger & Schwartz, 1990) is a validated measure of repressive-defensiveness. It was selected as the most psychometrically sound of six repression measures in a recent analysis (Turvey & Salovey, 1993–1994). It is composed of three subscales: Distress (Anxiety, Depression, Low Self-Esteem, Low Well-Being), Restraint (Suppression of Aggression, Impulse Control, Consideration of Others, and Responsibility) and Defensiveness (Repressive-Defensiveness, Denial of Distress). We elected to use the (a) Restraint (Suppression of Aggression: [reversed] “I lose my temper and ‘let people have it’ when I’m angry;” “If someone tries to hurt me, I make sure I get even with them;” Impulse Control: [reversed] “I do things without giving them much thought;” “I become ‘wild and crazy’ and do things other people might not like;” Consideration of Others: “I think about other people’s feelings before I do something they may not like;” “I make sure that doing what I want will not cause problems for other people;” and Responsibility: [reversed] “When I have the chance, I take things I want that don’t really belong to me;” “I will cheat on something if I know no one will find out”), and (b) Repressive-Defensiveness (“There have been times when I said I would do one thing but did something else;” “Once in a while I break a promise I have made”) scales as continuous measures rather than use Weinberger’s typology (Weinberger & Schwartz, 1990). In our sample, the WAI Long Form was given at baseline and the Short Form at 1-year follow-up to reduce participant burden in this terminally ill population. We used the short form items from both baseline and 1-year follow-up in our analyses. The Short Form includes the 3 items with the highest item–total correlations (in a normative sample) within each of the four Restraint subscales, 12 items in all (Weinberger, 1990b). The entire 11-item Repressive-Defensiveness scale is included in both the Short and Long Forms and was used in the present sample. Cronbach’s alpha for our current sample was .53 for Restraint and .69 for Repressive-Defensiveness. The WAI was completed twice, at baseline and 1 year.

Emotional self-efficacy. The Stanford Emotional Self-Efficacy Scale—Cancer (SESES-C; Giese-Davis et al., in press) measures a patient’s confidence in three domains of emotional self-efficacy used when facing a life-threatening illness: (a) Communicating Emotions in Relationships: “Ask for the emotional support I need from my spouse/partner or closest friend;” (b) Focusing in the Present Moment: “Stay calm while waiting for the results of medical tests;” and (c) Confronting Death and Dying: “Directly consider the thought that I might die.” Each item is rated on a 100-point Likert-type scale in increments of 10 ranging from 0 (*not at all confident*) to 100 (*completely confident*). Subscale scores are the mean of the 5 items within each subscale. Total score is the mean of all 15 items. Adequate 3-month test–retest reliability has been demonstrated ($r = .80-.95$) for subscales and total score. Cronbach’s alphas in the current sample were .87 for total score, .81 for Communicating Emotions, .75 for Focusing in the Moment, and .82 for Confronting Death. The SESES-C was completed four times during the first year of the study.

Analysis

We used slopes analysis to test our hypotheses (Gibbons, Hedeker, Waternaux, Kraemer, & Greenhouse, 1993). In this method, for each participant, we estimated a slope of outcome on time (measured in months)

using standard linear regression. These slopes were used as the dependent measures in a 2 (treatment vs. control) \times 3 (sites) analysis of covariance. Intercepts of the dependent variable were used as covariates rather than baseline values because they are more reliable estimates of the true baseline value. All hypothesized treatment versus control relationships were tested with one-tailed tests because of directional a priori hypotheses.

Sample

Data from all participants who provided at least one follow-up point were included in the analyses for each outcome by intention to treat. Demographic and medical variables are described in Table 1.

The sample for each outcome slope of change ($n = 97$, CECS; $n = 62$, WAI Restraint; $n = 64$, WAI Repressive-Defensiveness; $n = 65$, SESES-C) included in this article is reduced from the 125 women randomized at baseline for various reasons (2 women filling out the WAI were missing too many items on the Restraint Scale to score it). Because of the nature of the illness, many women died before they could complete a follow-up assessment, and some women declined to complete follow-ups because of illness-related factors ($ns = 17, 35, 35$, and 17 for the four scales, respectively).

Ninety-seven women were included in the data analysis for the CECS because 28 did not complete the postbaseline assessments. Sixty-three women were included in analyses involving the WAI (Repressive-Defensiveness and Restraint Scales). This scale was given at yearly rather than quarterly intervals in the first year. Slopes may be created based on 2 or more follow-up points. For the CECS and SESES-C, four possible points were assessed in the first year. For the WAI, slopes are based on 2 points, baseline and 1 year. Because of the greater time period between assessments, more women died or became too ill to fill them out. For the newly developed SESES-C, 65 women were available for analysis. In addition to the women whose scores were unavailable for the CECS, the first 32 women recruited into the study (15 control and 17 treatment) were not given the SESES-C at baseline and could not be included in the analysis.

The samples remaining for analysis in the current study (for the four measures, $ns = 97, 62, 64$, and 65, respectively) differ from the original sample ($n = 125$) in variables likely to reflect worse health status for those without follow-ups. For the CECS ($n = 97$ compared with $n = 28$ who did not complete follow-ups), women without follow-ups were more likely to be estrogen-receptor negative, $\chi^2(1, N = 125) = 5.57, p < .05$, and to have had chemotherapy as a treatment for their metastasis, $\chi^2(1, N = 125) = 3.83, p < .05$, and they were less likely to have had hormone therapy, $\chi^2(1, N = 125) = 5.92, p < .05$. Each of these differences is consistent with these 28 women being sicker than the women represented in the analysis (17 of whom died or were too ill to complete follow-ups). For the WAI ($n = 64$ compared with $n = 61$), women without postbaseline assessments on this instrument tended to report lower income, $\chi^2(5, N = 125) = 12.74, p < .05$. For the SESES-C ($n = 65$ compared with $n = 60$) there were no significant differences. None of these samples with follow-ups differed from those without on age at randomization, age at initial diagnosis, age at metastatic diagnosis, disease-free interval, time from diagnosis of metastasis to study entry, ethnicity, dominant site of recurrence, or marital status. Additionally, none of the samples differed on CECS, WAI Restraint, WAI Repression, or SESES-C at baseline.

Because there were reductions in our sample, we tested whether there were significant differences between treatment and control conditions for the numbers of women with slopes available for each of these analyses. We found that the treatment condition had significantly more women with follow-ups available for slopes calculations than did the control condition: CECS, $\chi^2(1, N = 125) = 7.40, p < .01$; Restraint, $\chi^2(1, N = 125) = 3.54, p = .06$; Repressive-Defensiveness, $\chi^2(1, N = 125) = 4.98, p < .05$; SESES-C, $\chi^2(1, N = 125) = 4.20, p < .05$. However, we found no significant treatment versus control differences at baseline on any of the

Table 1
Demographic, Medical, and Outcome Variables Measured at Baseline for Metastatic Breast Cancer Patients (N = 97)

Characteristic	Control (n = 41)			Treatment (n = 56)		
	M	SD	95% CI	M	SD	95% CI
CECS total	49.17	13.45	44.92–53.42	48.23	13.09	44.73–51.74
WAI Restraint	53.54	4.27	52.15–54.92	53.67	3.82	52.62–54.71
WAI Repressive–Defensiveness	33.63	8.51	31.90–37.35	34.77	8.02	32.62–36.92
SESES–C	75.01	13.73	69.47–80.56	74.63	16.06	69.43–79.84
Age (years)	53.80	10.49	50.49–57.11	52.70	10.53	49.88–55.52
Age at initial diagnosis	47.46	10.15	44.26–50.67	46.95	9.97	44.28–49.62
Age at metastatic diagnosis	51.05	9.99	47.89–54.20	50.75	10.35	47.98–53.52
Disease-free interval	41.97	33.66	31.34–52.59	45.12	34.27	35.94–54.30
Time from metastatic diagnosis to study entry (months)	33.14	54.12	16.06–50.23	23.08	28.26	15.51–30.64
Years of education	15.90	2.34	15.16–16.64	16.21	2.76	15.47–16.95
		%	95% CI		%	95% CI
Ethnicity						
Asian	16		4–27	2		0–5
Black	2		0–7	0		0–0
Hispanic	0		0–0	2		0–5
Native American	2		0–7	2		0–5
White	80		68–92	91		84–99
Other	0		0–0	3		0–8
Marital status						
Married	53		38–68	62		49–75
Never married	16		5–27	5		0–11
Separated	4		0–11	0		0–0
Divorced	20		8–32	26		14–37
Widowed	4		0–11	7		0–14
Other	2		0–7	0		0–0
Household income						
<\$20,000	18		6–29	10		2–18
\$20,000–39,999	11		2–21	10		2–18
\$40,000–59,999	27		13–40	24		13–35
\$60,000–79,999	11		2–21	12		3–21
\$80,000–99,999	11		2–21	16		6–25
\$100,000 or more	22		10–35	26		14–37
Estrogen receptor negative	11		2–21	19		9–29
Treatment						
Chemotherapy	43		30–56	42		27–57
Hormone therapy	82		71–94	81		71–91
Site of metastasis						
Chest wall	28		16–39	31		17–45
Bone	38		23–53	47		33–60
Viscera	31		17–45	26		14–37

Note. CI = confidence interval; CECS = Courtauld Emotional Control Scale; WAI = Weinberger Adjustment Inventory; SESES–C = Stanford Emotional Self-Efficacy Scale—Cancer. None of the values are significantly different.

demographic, medical, or outcome variables except for ethnicity in the samples with follow-ups. There were more minority women in the control group for Suppression, $\chi^2(1, N = 97) = 10.79, p < .10$; Restraint, $\chi^2(1, N = 62) = 6.33, p = .01$; Repressive–Defensiveness, $\chi^2(1, N = 64) = 6.66, p = .01$; and Emotional Self-Efficacy, $\chi^2(1, N = 65) = 12.46, p < .01$.

Results

To assess possible redundancy in the slopes of the four dependent variables over 1 year, we conducted Pearson product–moment

correlations (Table 2) of slopes. We have reported the correlations of slopes separately for control and treatment conditions. Correlations were low to moderate ($-.01$ – $.55$), indicating little conceptual overlap. Our hypotheses involve total scores for each measure. In our table showing the results and effect sizes (Table 3), we have included subscales for CECS and SESES–C for the possible interest of readers; however, we elected not to include the subscales of WAI Restraint. Restraint subscales for the Short Form of the WAI are each three items. In our data these subscales were highly skewed with marginal internal consistency, so we felt that reporting them would inappropriately validate their use.

Table 2
Correlations Between Slopes of Emotion Measures for Women With Metastatic Breast Cancer Over 1 Year

Slope	1	2	3	4
1. CECS total score	—	-.27 (37)	-.01 (39)	-.26 (39)
2. WAI Restraint	.18 (25)	—	.18 (27)	.35 (27)
3. WAI Repressive–Defensiveness	-.01 (25)	.32 (25)	—	.16 (29)
4. SESES–C total score	-.55** (26)	-.24 (16)	.03 (16)	—

Note. Zero-order correlations of study variables with *n* in parentheses. Control group correlations are below the diagonal, and treatment group correlations are above the diagonal. CECS = Courtauld Emotional Control Scale; WAI = Weinberger Adjustment Inventory; SESES–C = Stanford Emotional Self-Efficacy Scale—Cancer. ** *p* < .01.

Suppression: 12-Month Linear Model

Using the general linear model (GLM) procedure, we found that the overall model was significant, $F(6, 90) = 6.77, p < .001$. The difference between treatment and control groups on the 12-month slopes of CECS total scores reached statistical significance, $t(90) = -2.29, p = .01$, one-tailed, with women in the treatment group showing a significant decrease in mean CECS total score over 12 months when compared with the women in the control group (as illustrated in Figure 1). Higher baseline CECS total score was significantly related to a decreasing 1-year slope of change, $F(1, 90) = 31.95, p < .001$; however, site, $F(2, 90) = 0.53, ns$, was not significant, nor was the Site \times Condition interaction, $F(2, 90) = 0.25, ns$.

Restraint: 12-Month Linear Model

Using the GLM procedure, we found that the overall model was significant, $F(6, 55) = 5.28, p < .001$. The difference between treatment and control groups on the 12-month slopes of the WAI Restraint scores reached statistical significance, $t(55) = 1.69, p <$

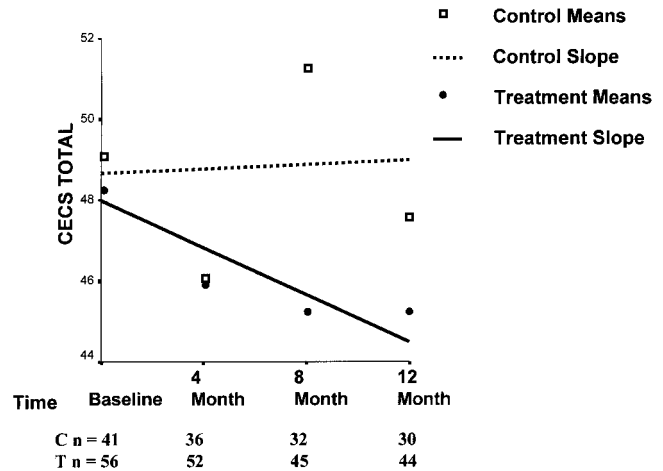


Figure 1. Means and mean slopes of Courtauld Emotional Control Scale (CECS) total score for treatment and control conditions. The *ns* for means shown for each follow-up differ because of loss of participants due to declining health and death. Mean slopes are plotted from baseline to 1 year (per individual fit to real time in months). Sample *ns* at each timepoint are below the chart. C n = control *n*; T n = treatment *n*.

.05, one-tailed, with the women in the treatment group showing an increase in Restraint over 12 months when compared with women in the control group (as illustrated in Figure 2). Higher WAI Restraint scores were significantly related to a decreasing 1-year slope of change, $F(1, 55) = 17.35, p < .001$, and there was a significant site difference, with both treatment and control groups changing less for the San Jose than for the San Francisco or Stanford sites, $F(2, 55) = 3.84, p < .05$. The interaction of Site \times Condition, $F(2, 55) = 1.34, ns$, was not significantly related to the slope of change.

Repressive–Defensiveness: 12-Month Linear Model

Using the GLM procedure, we found that the overall 12-month model examining repressive–defensiveness failed to reach statistical significance, $F(6, 57) = 1.41, ns$.

Table 3
Means, Standard Deviations, and Effect Sizes for Slopes of Emotion Outcome Variables

Variable	Total <i>N</i>	Treatment		Control		<i>d</i>
		Slope <i>M</i> \pm <i>SD</i>	<i>n</i>	Slope <i>M</i> \pm <i>SD</i>	<i>n</i>	
CECS total	97	-0.29 \pm 0.78	56	0.03 \pm 0.86	41	-.39*
Anger		-0.08 \pm 0.30		-0.02 \pm 0.38		-.18*
Depression		-0.11 \pm 0.36		0.03 \pm 0.36		-.38*
Anxiety		-0.10 \pm 0.35		0.01 \pm 0.34		-.32
WAI Restraint	62	0.06 \pm 0.33	37	-0.02 \pm 0.22	25	.27*
WAI Repression	64	-0.08 \pm 0.40	39	0.03 \pm 0.37	25	-.28
SESES–C total	65	0.05 \pm 1.24	39	-0.58 \pm 1.75	26	.42
Communicate Emotion		-0.23 \pm 1.55		-0.58 \pm 2.02		.20
Confront Death		0.19 \pm 1.74		-0.72 \pm 2.25		.46
Focus on Present		0.18 \pm 1.31		-0.45 \pm 1.63		.43*

Note. *d* = standardized mean difference between groups; CECS = Courtauld Emotional Control Scale; WAI = Weinberger Adjustment Inventory; SESES–C = Stanford Emotional Self-Efficacy Scale—Cancer. * *p* < .05.

Emotional Self-Efficacy: 12-Month Linear Model

Using the GLM procedure, we found that the overall model for Emotional Self-Efficacy was significant, $F(6, 58) = 5.45, p < .001$. The difference between treatment and control groups was marginally significant, $t(58) = 1.61, p = .055$, one-tailed, with the women in the treatment group not declining in emotional self-efficacy over 12 months as compared with women in the control group (as illustrated in Figure 3). The baseline Emotional Self-Efficacy total score was significantly related to the 1-year slope of change, $F(1, 58) = 22.43, p < .001$. Neither site, $F(2, 58) = 0.69, ns$, nor the interaction of Site \times Condition, $F(2, 58) = 1.99, ns$, was significantly related to the slope of change.¹

Discussion

The results of a randomized clinical trial of women diagnosed with metastatic breast cancer indicate that supportive-expressive group psychotherapy can significantly change reported affect-regulation strategies. This study found a significant reduction in suppression of primary negative affect in the treatment group while also showing a significant improvement in greater restraint of aggressive, inconsiderate, irresponsible, and impulsive behavior. We did not demonstrate that participants experienced a reduction in repression or an increase in emotional self-efficacy. These findings challenge trait conceptualizations of suppression and restraint and suggest instead that change is possible through the use of an emotion-focused therapy even at a time when women are coping with debilitating treatment, pain, and loss of function. It is unclear whether the observed changes are clinically significant without further research investigating these changes as mediators of hypothesized psychosocial and physiological changes.

The emphasis of SET on encouraging participants to express their painful emotions in response to existential concerns (Spiegel & Classen, 1999) appears to be effective in facilitating change in affect regulation. The effect sizes we found were moderate, and it

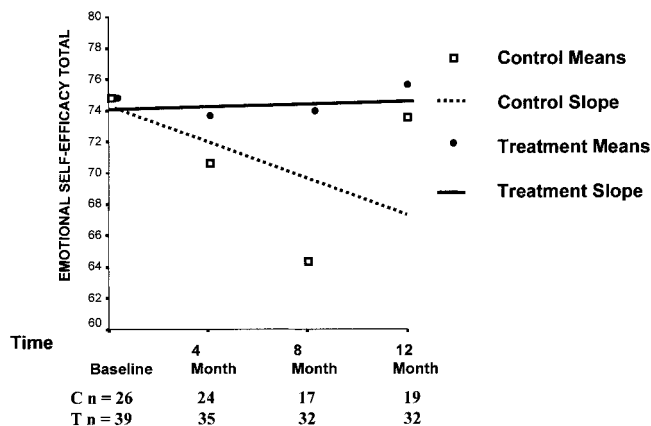


Figure 3. Means and mean slopes of Stanford Emotional Self-Efficacy Scale—Cancer total score for treatment and control conditions. The *ns* for means shown for each follow-up differ because of loss of participants due to declining health and death. Mean slopes are plotted from baseline to 1 year (per individual fit to real time in months). Sample *ns* at each timepoint are below the chart. C n = control n; T n = treatment n.

is unclear whether they are clinically relevant (see the special issue of the *Journal of Consulting and Clinical Psychology* on clinical significance, June 1999; Kendall, Marrs-Garcia, Nath, & Sheldrick, 1999). However, women in the group have often talked about how important it is to them to be more able to express their strong emotions, particularly fear, anger, and sadness about dying. In an interview, when asked to describe the best thing about the group, one woman summarized what many women also reported: “[the group is] a place to really get all your feelings about cancer out there, a safe place, where you won’t be rejected, a place to say whatever you want. When things are bothering you, the therapist brings them to the surface, helps to get the demons out.” Because no prior research exists, we have no basis for conjecture about the level of effect size that would prove beneficial.

The SET treatment group’s ability to change these affect-regulation strategies supports other research indicating that suppression of primary negative affect may be a separable construct from restrained hostility. These findings extend other work that has found that inhibition of primary negative affect was related to lower positive affect, whereas greater control of aggression was related to lower negative affect and better interpersonal relationships (L. A. King & Emmons, 1991; Tavris, 1984). This distinction is clinically important, as some cancer patients feel justified in indulging in the expression of unrestrained hostility because they have heard that emotional expression may be important to their survival. This notion is a misconception. In failing to differentiate the constructs of hostility and anger these women may be “dumping” inconsiderate and aggressive affect onto their loved ones with the unintended consequence of alienating their support network at a time when they need it most.

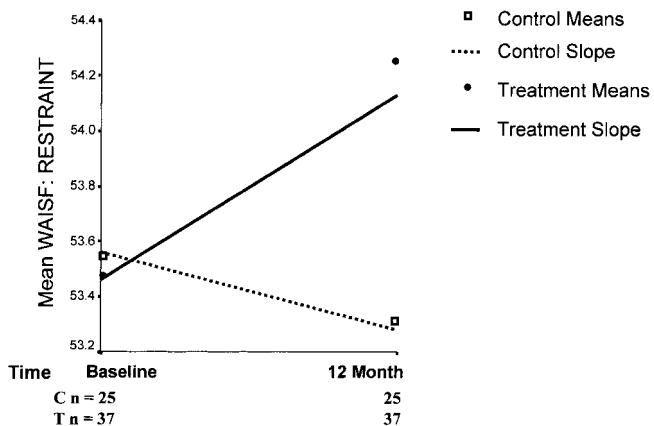


Figure 2. Means and mean slopes of Weinberger Adjustment Inventory, Short Form (WAISF)—Restraint Scale total score for treatment and control conditions. The *ns* for means shown for each follow-up differ because of loss of participants due to declining health and death. Mean slopes are plotted from baseline to 1 year (per individual fit to real time in months). Sample *ns* at each timepoint are below the chart. C n = control n; T n = treatment n.

¹ We double-checked each of our results by including ethnicity (Caucasian vs. minority) as a covariate. Because this covariate did not change the results, we removed it from the text of the article on the advice of a reviewer. Likewise, we also controlled for age, but this covariate did not change any of the results and it was removed from the text of the article.

In contrast to these significant effects, the treatment group did not reduce repression or increase emotional self-efficacy. Repression is more likely than the other variables to be an ingrained form of affect regulation that may operate outside conscious awareness (e.g., Miller, 1992) and is less amenable to psychosocial intervention (Crowne & Marlowe, 1964; Kiecolt-Glaser & Murray, 1980). It is unclear whether there is an intervention that will change repressive-defensiveness. Emotional self-efficacy needs to be re-examined in future trials because we began to assess this variable later in our participant recruitment, and therefore the smaller sample size for this analysis may have led to a Type II error due to low statistical power for testing the hypothesis.

This study is limited by small sample sizes, which reduced our power to demonstrate large effect sizes. Methodological limitations also include the use of self-report measures of affect regulation, limitations in the scope of affect-regulation instruments, and limited heterogeneity of sample demographics and treatment type and stage. Previous researchers have argued that self-report measures are vulnerable to socially desirable responses (Huang, Liao, & Chang, 1998) and that respondents have a limited capacity to report accurately on themselves (Nisbett & Bellowsa, 1977). As these limitations affect baseline as well as follow-up scores, they restrict systematic variance in the outcome measures that can be affected by an intervention, making it more likely that treatment effects are obscured rather than artificially bolstering them (Smith & Miller, 1978). These limitations can be partly addressed by conducting observational research that does not rely on self-report, and future work could examine videotapes of the group therapy sessions.

The sample is highly homogenous, predominantly White, with middle- to upper-middle-class backgrounds, reducing our confidence in drawing conclusions about the likely effects of SET on improving affect regulation for patients from other ethnic and social-class backgrounds. Cultural adaptations in SET may be needed to use it to effectively promote affect regulation for poorer or culturally diverse populations. Generalizability is also limited to women with metastatic breast cancer.

This study has methodological strengths that counterbalance the limitations just noted. We used a conservative intent-to-treat research design in which women who were randomly assigned to the treatment condition were included in the analysis even if they dropped out of treatment. Also, standardized measures were used to assess the outcomes of suppression of negative affect (Watson & Greer, 1983) and of restraint and repression (Weinberger, 1990b), and we developed an additional measure to assess emotional self-efficacy for coping with serious illness (Giese-Davis et al., in press).

Further research is needed to examine change in emotion-regulation strategy using SET for men and women with different types and different stages of cancer. It is unclear whether SET can significantly improve affect regulation among patients who are diagnosed with conditions that are not life threatening. This study also did not examine all possible dimensions of self-reported affect regulation that might be of interest. For example, measures of emotional intelligence (Davies, Stankov, & Roberts, 1998; Salovey et al., 1995; Schutte et al., 1998) and emotional expression and processing (Stanton, Kirk, Cameron, & Danoff-Burg, 2000) have been developed since our study began in 1991. These

emotion-regulation dimensions may be important when facing metastatic breast cancer.

Future research must examine whether these changes in suppression and restraint mediate important psychosocial and physiological changes, including differences in survival, and other changes, as would be suggested by previous psychotherapy research on the benefits of emotional arousal and expression in resolution of problematic reactions to difficult situations (Watson, 1996). It is premature to examine these effects on survival at this point in our ongoing research, as a substantial number of the participants are continuing to survive. Perhaps future research can determine which aspects of the group process facilitate this change in emotion regulation and whether such results are unique to emotion-focused therapy.

References

- Adams, S. H. (1994). Role of hostility in women's health during midlife: A longitudinal study. *Health Psychology, 13*, 488–495.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*, 191–215.
- Barefoot, J. C., Dahlstrom, W. G., & Williams, R. B. (1983). Hostility, CHD incidence, and total mortality: A 25-year follow-up study of 255 physicians. *Psychosomatic Medicine, 45*, 59–63.
- Barefoot, J. C., Dodge, K. A., Peterson, B. L., Dahlstrom, W. G., & Williams, R. B. (1989). The Cook–Medley hostility scale: Item content and ability to predict survival. *Psychosomatic Medicine, 51*, 46–57.
- Classen, C., Abramson, S., Angell, K., Atkinson, A., Desch, A., Vinciguerra, C., et al. (1997). Effectiveness of a training program for leading supportive-expressive breast cancer groups. *Journal of Psychotherapy Practice and Research, 6*, 211–218.
- Classen, C., Butler, L. D., Koopman, C., Miller, E., Dimiceli, S., Giese-Davis, J., et al. (2001). Supportive-expressive group therapy and distress in patients with metastatic breast cancer: A randomized clinical intervention trial. *Archives of General Psychiatry, 58*, 494–501.
- Classen, C., Koopman, C., Angell, K., & Spiegel, D. (1996). Coping styles associated with psychological adjustment to advanced breast cancer. *Health Psychology, 15*, 434–437.
- Crowne, D. P., & Marlowe, D. (1964). *The approval motive: Studies in evaluative dependence*. New York: Wiley.
- Daldrup, R. J., Engle, D., Holiman, M., & Beutler, L. E. (1994). The intensification and resolution of blocked affect in an experimental psychotherapy. *British Journal of Clinical Psychology, 33*, 129–141.
- Davies, M., Stankov, L., & Roberts, R. D. (1998). Emotional intelligence: In search of an elusive construct. *Journal of Personality and Social Psychology, 75*, 989–1015.
- Dembroski, T. M., MacDougall, J. M., Costa, P. T., & Granditis, G. A. (1989). Components of hostility as predictors of sudden death and myocardial infarction in the Multiple Risk Factor Intervention Trial. *Psychosomatic Medicine, 51*, 514–522.
- Derogatis, L. R., Abeloff, M. D., & Melisaratos, N. (1979). Psychological coping mechanisms and survival time in metastatic breast cancer. *JAMA, 242*, 1504–1508.
- Ekman, P. (Ed.). (1972). *Darwin and facial expression: A century of research in review*. New York: Academic Press.
- Ekman, P., & Friesen, W. V. (1975). *Unmasking the face*. Englewood Cliffs, NJ: Prentice Hall.
- Fawzy, F. I., Fawzy, N. W., Hyun, C. S., Elashoff, R., Guthrie, D., Fahey, J. L., & Morton, D. L. (1993). Malignant melanoma: Effects of an early structured psychiatric intervention, coping, and affective state on recurrence and survival 6 years later. *Archives of General Psychiatry, 50*, 681–689.

- Feldman, S. S., & Weinberger, A. D. (1994). Self-restraint as a mediator of family influences on boys' delinquent behavior: A longitudinal study. *Child Development, 65*, 195–211.
- Free, K., Alechina, I., & Zahn-Waxler, C. (1996). Affective language between depressed mothers and their children: The potential impact of psychotherapy. *Journal of the American Academy of Child and Adolescent Psychiatry, 35*, 783–790.
- Gendlin, E. T. (1969). Focusing. *Psychotherapy, 6*, 4–15.
- Gibbons, R. D., Hedeker, D., Waternaux, C., Kraemer, H. C., & Greenhouse, J. B. (1993). Some conceptual and statistical issues in the analysis of longitudinal psychiatric data. *Archives of General Psychiatry, 50*, 730–750.
- Giese-Davis, J., Koopman, C., Butler, L. D., Joss, J., Classen, C., Roberts, J., et al. (in press). The Stanford Emotional Self-Efficacy Scale—Cancer: Reliability, validity, and generalizability. In L. R. Temoshok (Ed.), *Biobehavioral perspectives on health and disease prevention* (Vol. 6): New York: Harwood Academic.
- Giese-Davis, J., & Spiegel, D. (1995). *Group experiences inventory*. Unpublished self-report scale.
- Giese-Davis, J., & Spiegel, D. (2001). Suppression, repressive-defensiveness, restraint, and distress in metastatic breast cancer: Separable or inseparable constructs? *Journal of Personality, 69*, 417–449.
- Giese-Davis, J., & Spiegel, D. (in press). Emotional expression and cancer progression. In R. J. Davidson, K. Scherer, & H. Hill Goldsmith (Eds.), *Handbook of affective sciences*. Oxford, England: Oxford University Press.
- Gray, J. A. (1982). Precipitous of the neuropsychology of anxiety. *The Behavioral and Brain Sciences, 5*, 464–534.
- Greenberg, L. (1993). Emotion and change processes in psychotherapy. In M. Lewis & J. M. Haviland (Eds.), *Handbook of emotions* (pp. 499–519). New York: Guilford Press.
- Greenberg, L. S., & Foerster, F. S. (1996). Task analysis exemplified: The process of resolving unfinished business. *Journal of Consulting and Clinical Psychology, 64*, 439–446.
- Greenberg, L. S., Ford, C. L., Alden, L. S., & Johnson, S. M. (1993). In-session change in emotionally focused therapy. *Journal of Consulting and Clinical Psychology, 61*, 78–84.
- Greenberg, L. S., & Safran, J. D. (1984). Integrating affect and cognition: A perspective on the process of therapeutic change. *Cognitive Therapy and Research, 8*, 559–587.
- Greenberg, L. S., & Safran, J. D. (1989). Emotion in psychotherapy. *American Psychologist, 44*, 19–29.
- Greenberg, L. S., & Webster, M. C. (1982). Resolving decisional conflict by Gestalt two-chair dialogue: Relating process to outcome. *Journal of Counseling Psychology, 29*, 468–477.
- Greenberg, M. A., Wortman, C. B., & Stone, A. A. (1996). Emotional expression and physical health: Revising traumatic memories or fostering self-regulation? *Journal of Personality and Social Psychology, 71*, 588–602.
- Gross, J. (1989). Emotional expression in cancer onset and progression. *Social Science and Medicine, 28*, 1239–1248.
- Hannigan, J. F., & Brown, B. W. (1982). *Adaptive randomization biased coin-design: Experience in a cooperative group clinical trial technical report (7.4)*. Stanford, CA: Stanford University, Division of Biostatistics.
- Honig, A., Hofman, A., Rozendaal, N., & Dingemans, P. (1997). Psychoeducation in bipolar disorder: Effect on expressed emotion. *Psychiatry Research, 72*, 17–22.
- Huang, C., Liao, H., & Chang, S. (1998). Social desirability and the clinical self-report inventory: Methodological reconsideration. *Journal of Clinical Psychology, 544*, 517–528.
- Izard, C. E. (1977). *Human emotions*. New York: Plenum Press.
- Jensen, M. R. (1987). Psychobiological factors predicting the course of breast cancer. *Journal of Personality, 55*, 317–342.
- Julius, M., Harburg, E., Cottingham, E. M., & Johnson, E. H. (1986). Anger-coping types, blood pressure, and all-cause mortality: A follow-up in Tecumseh, Michigan (1971–1983). *American Journal of Epidemiology, 124*, 220–233.
- Karnofsky, D. A., & Burchenal, J. H. (1949). *The clinical evaluation of chemotherapeutic agents in cancer*. New York: Columbia University Press.
- Kendall, P. C., Marrs-Garcia, A., Nath, S. R., & Sheldrick, R. C. (1999). Normative comparisons for the evaluation of clinical significance. *Journal of Consulting and Clinical Psychology, 67*, 285–299.
- Kiecolt-Glaser, J. K., & Murray, J. A. (1980). Social desirability bias in self-monitoring data. *Journal of Behavioral Assessment, 2*, 239–247.
- King, L. A., & Emmons, R. A. (1991). Psychological, physical, and interpersonal correlates of emotional expressiveness, conflict, and control. *European Journal of Personality, 5*, 131–150.
- King, L. A., Emmons, R. A., & Woodley, S. (1992). The structure of inhibition. *Journal of Research in Personality, 26*, 85–102.
- King, S. (1988). *The differential effects of empty chair dialogue and empathy for unfinished business*. Unpublished manuscript, University of British Columbia, Vancouver, British Columbia, Canada.
- Klein, M. H., Mathieu-Coughlan, P., & Kiesler, D. J. (1986). The experiencing scales. In L. S. Greenberg & W. Pinsof (Eds.), *The psychotherapeutic process: A research handbook* (pp. 2–53). New York: Guilford Press.
- Koch, H. C. (1983). Correlates of changes in personal construing of members of two psychotherapy groups: Changes in affective expression. *British Journal of Medical Psychology, 56*, 323–327.
- Koskenvuo, M., Kaprio, J., Rose, R. J., Kesaniemi, A., Sarna, S., Heikkila, K., & Langinvainio, H. (1988). Hostility as a risk factor for mortality and ischemic heart disease in men. *Psychosomatic Medicine, 50*, 330–340.
- Kring, A. M., Smith, D. A., & Neale, J. M. (1994). Individual differences in dispositional expressiveness: Development and validation of the Emotional Expressivity Scale. *Journal of Personality and Social Psychology, 66*, 934–949.
- Lang, P. (1985). The cognitive psychophysiology of emotion: Fear and anxiety. In A. H. Tuma & J. E. Maser (Eds.), *Anxiety and the anxiety disorders* (pp. 130–170). Hillsdale, NJ: Erlbaum.
- Lieberman, M., & Borman, L. (1980). *Self-help groups for coping with crises*. San Francisco: Jossey-Bass.
- Linehan, M. M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. New York: Guilford Press.
- Mahrer, A. R. (1986). *Therapeutic experiencing: The process of change*. New York: Norton.
- Marshall, J. R. (1972). The expression of feelings. *Archives of General Psychiatry, 27*, 786–790.
- McCallum, M., Piper, W. E., & Morin, H. (1995). Affect and outcome in short-term group therapy for loss. *International Journal of Group Psychotherapy, 43*, 303–318.
- McKenna, M. C., Zevon, M. A., Corn, B., & Rounds, J. (1999). Psychosocial factors and the development of breast cancer: A meta-analysis. *Health Psychology, 18*, 520–531.
- Miller, N. E. (1992). Some examples of psychophysiology and the unconscious. *Biofeedback & Self Regulation, 17*, 3–16.
- Mohr, D., Shoham-Salomon, V., Engle, D., & Beutler, L. E. (1991). Anger in focused expressive psychotherapy: Its measurement and role. *Psychotherapy Research, 1*, 125–135.
- Moore, D., & Haverkamp, B. E. (1989). Measured increases in male emotional expressiveness following a structured group intervention. *Journal of Counseling and Development, 67*, 513–517.
- Nisbett, R. E., & Bellowsa, N. (1977). Verbal reports about causal influences on social judgments: Private access versus public theories. *Journal of Personality and Social Psychology, 35*, 613–624.
- Panskeep, J. (1982). Toward a general psychological theory of emotions. *The Behavioral and Brain Sciences, 5*, 407–467.

- Panskeep, J. (1992). A critical role for "affective neuroscience" in resolving what is basic about basic emotions. *Psychological Review*, 99, 554–560.
- Perls, F. S., Hefferline, R., & Goodman, P. (1951). *Gestalt therapy*. New York: Julian Press.
- Pettingale, K. W., Watson, M., & Greer, S. (1985). The validity of emotional control as a trait in breast cancer patients. *Journal of Psychosocial Oncology*, 2(3/4), 21–30.
- Reich, W. (1949). *Character analysis*. New York: Noonday.
- Rice, L. N., & Saperia, E. P. (1984). Task analysis and the resolution of problematic reactions. In L. N. Rice & L. S. Greenberg (Eds.), *Patterns of change* (pp. 29–66). New York: Guilford Press.
- Richardson, J. L., Shelton, D. R., Krailo, M., & Levine, A. M. (1990). The effect of compliance with treatment on survival among patients with hematologic malignancies. *Journal of Clinical Oncology*, 8, 356–364.
- Roger, D., & Nesshoever, W. (1987). The construction and preliminary validation of a scale for measuring emotional control. *Personality and Individual Differences*, 8, 527–534.
- Rogers, C. (1951). *Client-centered therapy*. Boston: Houghton Mifflin.
- Rund, B. R., Oie, M., Borchgrevink, T. S., & Fjell, A. (1995). Expressed emotion, communication deviance and schizophrenia: An exploratory study of the relationship between two family variables and the course and outcome of a psychoeducational treatment programme. *Psychopathology*, 28, 220–228.
- Salovey, P., & Mayer, J. D. (1990). Emotional intelligence. *Imagination, Cognition, and Personality*, 9, 185–211.
- Salovey, P., Mayer, J. D., Goldman, S. L., Turvey, C., & Palfai, T. P. (1995). Emotional attention, clarity, and repair: Exploring emotional intelligence using the trait meta-mood scale. In J. W. Pennebaker (Ed.), *Emotional disclosure, and health* (pp. 125–154). Washington, DC: American Psychological Association.
- Salovey, P., Rothman, A. J., Detweiler, J. B., & Steward, W. T. (2000). Emotional states and physical health. *American Psychologist*, 55, 110–121.
- Schutte, N. S., Malouff, J. M., Hall, L. E., Haggerty, D. J., Cooper, J. T., Golden, C. J., & Dornheim, L. (1998). Development and validation of a measure of emotional intelligence. *Personality and Individual Differences*, 25, 167–177.
- Shekelle, R. B., Gale, M., Ostfeld, A. M., & Paul, O. (1983). Hostility, risk of coronary heart disease, and mortality. *Psychosomatic Medicine*, 45, 109–114.
- Smith, E. R., & Miller, F. D. (1978). Limits on perception of cognitive processes: A reply to Nisbett and Wilson. *Psychological Review*, 85, 355–362.
- Spiegel, D. (1991). *Psychological treatment manual for patients with cancer*. Unpublished manuscript, Stanford University, Stanford, CA.
- Spiegel, D., Bloom, J. R., Kraemer, H. C., & Gottheil, E. (1989). Effect of psychosocial treatment on survival of patients with metastatic breast cancer. *Lancet*, 2(No. 8668), 888–891.
- Spiegel, D., & Classen, C. (1999). *Group therapy for cancer patients*. New York: Basic Books.
- Spiegel, D., & Kato, P. (1996). Psychosocial influences on cancer incidence and progression. *Harvard Review of Psychiatry*, 4, 10–26.
- Spiegel, D., & Spira, J. (1991). *Supportive/expressive group therapy: A treatment manual of psychosocial intervention for women with recurrent breast cancer*. Unpublished manuscript, Stanford University School of Medicine, Stanford, CA.
- Stanton, A. L., Danoff-Burg, S., Cameron, C. L., Bishop, M., Collins, C. A., Kirk, S. B., et al. (2000). Emotionally expressive coping predicts psychological and physical adjustment to breast cancer. *Journal of Consulting and Clinical Psychology*, 68, 875–882.
- Stanton, A. L., Kirk, S. B., Cameron, C. L., & Danoff-Burg, S. (2000). Coping through emotional approach: Scale construction and validation. *Journal of Personality and Social Psychology*, 78, 1150–1169.
- Taurke, E. A., Flegenheimer, W., McCullough, L., Winston, A., Pollack, J., & Trujillo, M. (1990). Change in patient affect/defense ratio from early to late sessions in brief psychotherapy. *Journal of Clinical Psychology*, 46, 657–668.
- Tavris, C. (1984). On the wisdom of counting to ten: Personal and social dangers of anger expression. *Review of Personality and Social Psychology*, 5, 170–191.
- Temoshok, L., & Fox, B. H. (1984). Coping styles and other psychosocial factors related to medical status and to prognosis in patients with cutaneous malignant melanoma. In B. H. Fox & B. H. Newberry (Eds.), *Impact of psychoendocrine systems in cancer and immunity* (pp. 86–146). New York: Hogrefe.
- Turvey, C., & Salovey, P. (1993–1994). Measures of repression: Convergence on the same construct? *Imagination, Cognition, and Personality*, 13, 279–289.
- Vaillant, G. E. (2000). Adaptive mental mechanisms: Their role in a positive psychology. *American Psychologist*, 55, 89–98.
- Vaillant, G. E., & Vaillant, C. O. (1990). Natural history of male psychological health: XII. A 45-year study of predictors of successful aging at age 65. *American Journal of Psychiatry*, 147, 31–37.
- Wagner, M. K. (1968). Comparative effectiveness of behavioral rehearsal and verbal reinforcement for effecting anger expressiveness. *Psychological Reports*, 22, 1079–1080.
- Watson, J. C. (1996). The relationship between vivid description, emotional arousal, and in-session resolution of problematic reactions. *Journal of Consulting and Clinical Psychology*, 64, 459–464.
- Watson, M., & Greer, S. (1983). Development of a questionnaire measure of emotional control. *Journal of Psychosomatic Research*, 27, 299–305.
- Weinberger, D. A. (1990a). The construct validity of the repressive coping style. In J. L. Singer (Ed.), *Repression and dissociation: Implications for personality theory, psychopathology, and health* (pp. 337–386). Chicago: University of Chicago Press.
- Weinberger, D. A. (1990b). *Social-emotional adjustment in older children and adults: I. Psychometric properties of the Weinberger Adjustment Inventory*. Unpublished manuscript.
- Weinberger, D. A. (1997). Distress and self-restraint as measures of adjustment across the life span: Confirmatory factor analyses in clinical and nonclinical samples. *Psychological Assessment*, 9, 132–135.
- Weinberger, D. A., & Davidson, M. N. (1994). Styles of inhibiting emotional expression: Distinguishing repressive coping from impression management. *Journal of Personality*, 62, 587–612.
- Weinberger, D. A., & Schwartz, G. E. (1990). Distress and restraint as superordinate dimensions of self-reported adjustment: A typological perspective. *Journal of Personality*, 58, 381–417.
- Williams, R. B., Haney, T. L., Lee, K. L., Kong, Y., Blumenthal, J. A., & Whalen, R. E. (1980). Type A behavior, hostility, and coronary atherosclerosis. *Psychosomatic Medicine*, 42, 539–549.
- Yalom, I. D. (1980). *Existential psychotherapy*. New York: Basic Books.

Received November 21, 2000

Revision received December 6, 2001

Accepted December 10, 2001 ■