ORIGINAL ARTICLE

Supportive-Expressive Group Therapy and Distress in Patients With Metastatic Breast Cancer

A Randomized Clinical Intervention Trial

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Background: Metastatic breast cancer carries with it considerable psychosocial morbidity. Studies have shown that some patients with metastatic breast cancer experience clinically significant anxiety and depression and traumatic stress symptoms. Supportive-expressive group psychotherapy was developed to help patients with cancer face and adjust to their existential concerns, express and manage disease-related emotions, increase social support, enhance relationships with family and physicians, and improve symptom control.

Methods: Of 125 women with metastatic breast cancer recruited into the study, 64 were randomized to the intervention and 61 to the control condition. Intervention women were offered 1 year of weekly supportive-expressive group therapy and educational materials. Control women received educational materials only. Participants were assessed at baseline and every 4 months during the first year. Data at baseline and from at least 1 assessment were collected from 102 participants during this 12-month period, and these participants compose the study population.

Results: Primary analyses based on all available data indicated that participants in the treatment condition showed a significantly greater decline in traumatic stress symptoms on the Impact of Event Scale (effect size, 0.25) compared with the control condition, but there was no difference in Profile of Mood States total mood disturbance. However, when the final assessment occurring within a year of death was removed, a secondary analysis showed a significantly greater decline in total mood disturbance (effect size, 0.25) and traumatic stress symptoms (effect size, 0.33) for the treatment condition compared with the control condition.

Conclusion: Supportive-expressive therapy, with its emphasis on providing support and helping patients face and deal with their disease-related stress, can help reduce distress in patients with metastatic breast cancer.

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IT IS ESTIMATED that 22% to 50% of patients with breast cancer meet criteria for a psychiatric diagnosis of depression,[1,2] 3% to 19% meet criteria for posttraumatic stress disorder,[3-7] and 33% meet criteria for acute stress disorder.[8] Advanced disease seems to be the most stressful time for patients with breast cancer[9-12] and places them at higher risk for emotional distress.[13]

In recent years there has been growing recognition that receiving a diagnosis of cancer or cancer recurrence can lead to a traumatic stress response.[3-8,14-16] The *DSM-IV*[17] now includes being diagnosed as having a life-threatening illness as meeting the criterion of "exposure to an extreme traumatic stressor" in the psychiatric diagnosis of posttraumatic stress disorder, suggesting that reducing trauma symptoms should be a goal of clinical interventions for patients with cancer. Although a full posttraumatic stress syndrome might afflict only a minority of breast cancer patients, most investigators[3,4,7,16,18,19] have found that clinically significant symptoms are relatively common. Given that adjustment to metastatic disease is often more difficult than adjustment to the initial diagnosis,[14] the need to find effective treatments for trauma symptoms in metastatic patients is all the more pressing.

Support groups have the potential to be a potent and cost-effective form of psychosocial treatment for patients with cancer. There have been several randomized investigations that have examined the effectiveness of group interventions and have shown positive effects on psychosocial adjustment,[20-28] physical status,[20,25,29,30] and survival.[30-32]

Most randomized group intervention studies have involved brief interventions[21-27] and have included a focus on education,[21,22,24-27,33] coping strategies,[21-27] and emotional support.[22-24,26,27] Some have also

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PARTICIPANTS AND METHODS

PARTICIPANTS

Study participants were 125 women with confirmed metastatic or locally recurrent breast cancer randomized into the study between January 1991 and December 1996. Because only 2 of the women included in the analyses had locally recurrent disease without metastasis, we refer to all participants as having metastatic breast cancer. Women were recruited through the Oncology Day Care Center at Stanford University Medical Center, Stanford, Calif; letters to community oncologists; brochures distributed in the community; and notices in local newspapers and breast cancer newsletters. Recruitment yielded 28 patients from Stanford's Oncology Day Care Center, 37 from community oncologists (includes patients from Kaiser Medical Center, San Francisco Bay Area, Calif), and 6 from oncology social workers. Fifty-four women were self-referred. A total of 155 women initially entered the study; 30 dropped out before randomization (12 because of disease progression, 7 who were found to be ineligible after their medical records were reviewed, and 11 who decided that they did not want to continue in the study).

All participants gave written informed consent for participation in a protocol approved by the Stanford University School of Medicine Human Subjects Committee. Women were eligible for the study if they had documented metastatic or recurrent breast cancer, had a Karnofsky score of at least 70%,[41] were proficient enough in English to be able to respond to questionnaires and participate in a support group, and were living in the Greater San Francisco Bay Area. A patient with a Karnofsky score of 70% is able to care for herself but unable to carry on normal activity or do active work. We did not include women with positive supraclavicular lymph nodes as the only metastatic lesion at the time of initial diagnosis; 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 (severe cervical intraepithelial neoplasia or squamous intraepithelial lesion II), or melanoma with a Breslow depth less than 0.76 mm; or other concurrent medical conditions likely to affect short-term survival.

BASELINE ASSESSMENTS AND RANDOMIZATION

Baseline assessments were conducted at our Stanford, San Francisco, and San Jose sites and included measures of distress, coping, social support, physical activity, and immune and endocrine function. On completion of baseline testing, participants were randomized to intervention or control conditions using the adaptive randomization biased coin-design method to ensure comparability of medical status in treatment and control conditions.[42] The adaptive randomization method used the following variables: (1) dominant site of metastasis at study entry (chest wall/regional lymph nodes, bone, or viscera), (2) estrogen receptor status (positive, negative, or unknown), (3) disease-free interval (time from initial diagnosis of breast cancer to first metastasis or recurrence: $<$1 year, 1 to 3 years, or $>$3 years), (4) age at study entry ($<$50 years or $\geq$50 years), (5) systemic treatment received since metastasis (none, chemotherapy only, hormonal therapy only, or chemotherapy and hormonal therapy), and (6) institution (Stanford's Oncology Day Care Center, Kaiser Medical Center, or a community oncologist). Sixty-four women were randomized to the intervention arm of the study and 61 to the control arm.

Only 102 women were included in the data analysis because 23 of the 125 women randomized into the study did not complete any postbaseline assessments: 15 of these 23 participants were too ill to complete questionnaires (4 treatment and 11 control participants), 2 were too busy (both control participants), 4 withdrew from the study because they were not assigned to a support group, 1 withdrew because she did not like the support group, and 1 assigned to the treatment condition withdrew for no stated reason. All women included in the analyses had metastatic breast cancer except for 2 women who had breast recurrences after breast-conserving therapy as their only site of recurrent metastatic disease. Data from all participants who provided at least 1 follow-up point were included in the analyses. The design of this study required that all data for women randomized to treatment were subject to analysis (if at least 2 assessments were completed), regardless of their group attendance. In the present analyses, 1 participant randomized to the treatment group never actually attended a group, although she completed follow-up assessments. Two other participants randomized to the treatment group did not attend for a year or more after randomization, although they completed follow-up assessments. Two participants dropped out of the groups after 1 or 2 sessions, and both continued to complete follow-up assessments. Demographic and medical variables of participants are described in **Table 1**.

INTERVENTION CONDITION

When recruited into the study, participants were promised 1 year of group therapy if randomized to the treatment group and were encouraged to remain in the group for at least 1 year. There were 3 treatment groups, 1 at each geographic site, and they met weekly for 90-minute sessions. The size of the groups varied over time because of women's dying and rolling recruitment, with the size ranging from 3 to 15 participants in any given group. The intended duration of treatment was 1 year. However, because participants were recruited over several years and because once randomized to the treatment condition they joined existing groups, these groups continued for several years. Participants were invited to remain in the groups for as long as they wanted. Some participants have been attending group meetings since the first year of the study and thus have participated in the groups for as long as 8 years. Most women continued participating for as long as their health permitted.

The therapy sessions were facilitated by 2 therapists. Therapists included a psychiatrist, psychologists, and social workers. The supportive-expressive therapy model involved the creation of a supportive environment in which participants were encouraged to confront their problems, strengthen their relationships, and find enhanced meaning in their lives. The intervention was unstructured, with therapists trained to facilitate discussion of the following themes as the material emerged and in an emotionally expressive rather than a didactic format: (1) fears of dying and death, including dealing with the deaths of group members; (2) reordering life priorities; (3) improving support from and communication with family and friends; (4) integrating a changed self and body image; and (5) improving communication with

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physicians.[36,43] Through sharing of their experiences, group members also became role models for one another, teaching each other coping strategies that they found to be effective in managing the illness. Psychoeducation was provided in a similar fashion, with group members sharing knowledge they gathered about the illness and related issues. Neither coping strategies nor psychoeducation was taught in a didactic manner. Each session ended with a self-hypnosis exercise to help patients manage stress and deal with pain. Patients were encouraged to use this exercise at home. A major purpose of the therapy sessions was to create a close-knit group that would serve to counter feelings of isolation and enhance social support. This expanded their social network, provided role models for coping with the illness, and enhanced self-esteem through their providing concrete help to others in a similar situation.[36] Leaders kept members focused on issues central to their diagnoses of metastatic breast cancer and on facing and grieving for their losses.

CONTROL CONDITION

To ensure full participation and cooperation, we offered a self-directed education intervention to women randomized to the control condition. To control for the effect of education, the educational materials were also offered to the women randomized to the treatment condition. Thus, all participants were offered educational materials after baseline testing and after each follow-up session. They were given a list of materials to select from and to take home on loan. The selection of 30 books, 15 pamphlets, 5 videotapes, and 7 audiotapes covered a wide range of topics related to breast cancer, including medical information, coping with adverse effects of chemotherapy and radiation, pain control, lymphedema, menopause, nutrition, breast self-examination, body image, sexuality, emotional coping, social support, shared personal experiences, photography, poetry, artwork, humor, politics and history of breast cancer, chronic illness, inspiration, spirituality, hospice, and death. They were also given a 1-year membership to a consumer health library in their community. At each follow-up visit, participants were asked if they had used the educational materials. Thirty-two control patients and 35 treatment patients answered yes to this question at least once. Control patients answered yes a total of 57 times (range, 1-4 times each). Treatment patients answered yes on 64 occasions (range, 1-5 times each).

MEASURES

Postbaseline assessments were conducted every 4 months during the first year and every 6 months thereafter. For the first 2 years of the study, baseline and postbaseline assessments were completed on computers at our Stanford and San Francisco offices. After that, questionnaires were administered in a paper-and-pencil format so that they could be completed at home.

The Profile of Mood States (POMS)[44] was used to assess mood disturbance over time. This measure was chosen because it was used in the original study[20] and showed significant group differences in change over time between a supportive-expressive therapy group and a no-treatment control group. Participants were asked to indicate the extent to which 65 mood-descriptive adjectives (eg, "tense," "angry," "sad," and "clear-headed") described how they felt during the past week. Ratings were made on a 5-point Likert-type scale ranging from "not at all" to "extremely." A total mood disturbance score was calculated based on each of the 6 subscales: anxiety, depression, hostility, confusion, vigor, and fatigue. This measure has been shown to have excellent psychometric properties.[44] The Cronbach α for the 102 women used in the analysis for the POMS total score was .93 at baseline.

The Impact of Event Scale (IES)[45] was used to assess change over time in trauma symptoms. The IES is a 15-item measure designed to assess symptoms of intrusion and avoidance that can occur in response to a potentially traumatic event, such as being diagnosed as having breast cancer. The 2 subscales measuring intrusion and avoidance symptoms can be combined to give an IES total score. In this study, participants were asked to estimate the frequency of experiencing intrusive and avoidant symptoms during the past 7 days in response to having cancer. Participants indicated the extent to which they experienced these symptoms on a 4-point scale ranging from "not at all" to "often." This measure has been used with a variety of populations, including patients with breast cancer,[3,16] and has been demonstrated to be a valid and reliable measure.[46] The Cronbach α for the 102 participants in the present study was .87 for IES total score.

In the present study, the POMS total score is correlated with the IES total score at $r=0.60$ ($P<.001$). These measures are moderately correlated, sharing 36% of the variance. Although the IES shares some variance with the POMS, we chose to include the IES in this analysis because of the recent literature demonstrating that traumatic stress symptoms are prevalent in patients with cancer.

ANALYSIS

Slopes analyses were used for testing our hypotheses.[47] Each participant with a prerandomization baseline measure and at least 1 postbaseline assessment had a slope constructed across assessments regressed on time using months as the unit of time. These outcome slopes became the dependent measure in a 2 (treatment vs control) $\times$ 3 (geographic sites) analysis of covariance. The primary analyses were conducted on the POMS total mood disturbance scores and the IES total scores based on slopes computed for each participant's first year in the study. Another set of secondary analyses were conducted based on slopes of the total scores for the POMS and IES calculated for the first year of the intervention but excluding the final assessment if it occurred within 12 months of death. Primary and secondary analyses were also conducted on the subscales for each measure. The final assessment was excluded for participants who died within a year of that assessment because of previous research demonstrating that there is a significant rise in distress before death (L.D.B.; C.K.; M. J. Cordova, PhD; R. W. Garlan, MS; S.D.; and D.S.; unpublished observations; 1999). In slopes analysis, the end points have a greater effect on the slope relative to other assessment points. Consequently, the spike in distress and trauma symptoms just before death has the potential to obscure the overall trend. Thus, the effect of proximity to death on the slope is removed in this analysis. Because change in mood disturbance is typically associated with initial levels, each analysis of variance included the intercept as a covariate. We included the intercept rather than the baseline itself because the intercept is the best estimate of the true baseline

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value. All hypothesized treatment vs control relationships were tested with 2-tailed tests, and $\alpha = .05$ was used. Effect sizes were calculated based on the standardized mean difference between the group means.[48] *t* Tests were also conducted to determine whether patients who dropped out differed significantly in their baseline POMS and IES scores from the completers of their assigned group, and no significant differences were found.

included stress management[23-27] or behavioral training such as hypnosis or progressive relaxation.[22-24,26,27] Most interventions were structured, with a predetermined schedule of topics to be addressed.

The supportive-expressive method used in the present study differs in being relatively more extensive and intensive.[20,31,34-36] Supportive-expressive group therapy contains many of the elements seen in the brief interventions described previously and is unstructured and existentially based. The rationale for the existential orientation presumes that living with a terminal illness amplifies existential concerns of death, meaning, freedom, and isolation.[36,37] Thus, one aim of the group intervention is to give patients an opportunity to discuss these concerns. The treatment strategy is to facilitate discussion of issues that are uppermost in patients' minds rather than imposing the topics to be discussed. In previous research,[20,38] this intervention was shown to result in a reduction in mood disturbance, maladaptive coping responses, phobias, and the experience of pain. However, this previous research did not assess trauma symptoms.

The supportive-expressive group method has been applied by others[39,40] and has been shown to reduce mood disturbance in human immunodeficiency virus–infected individuals.[40] A hybrid version of this intervention, however, was not found to benefit patients with metastatic breast cancer.[28,32]

The present analysis has 2 aims. One is to test the hypothesis that 1 year of supportive-expressive group

Table 1. Characteristics of 102 Patients With Metastatic Breast Cancer*

	Control Group (n = 44)	Treatment Group (n = 58)
Demographic Variables		
Age, mean ± SD (range), y	54.0 ± 10.7 (33-80)	52.9 ± 10.7 (33-73)
Education, mean ± SD (range), y	15.9 ± 2.4 (12-20)	16.3 ± 2.7 (12-26)
Ethnicity, No. (%)		
Asian	7 (16)	1 (2)
Black	1 (2)	0
Hispanic	0	1 (2)
American Indian	1 (2)	1 (2)
White	35 (80)	53 (91)
Other	0	2 (4)
Marital status, No. (%)		
Married	23 (52)	36 (62)
Never married	7 (16)	3 (5)
Separated	2 (5)	0
Divorced	9 (20)	15 (26)
Widowed	2 (5)	4 (7)
Other	1 (2)	0
Household income, No. (%), $		
<20 000	8 (18)	6 (10)
20 000-39 999	5 (11)	6 (10
40 000-59 999	11 (25)	14 (24)
60 000-79 999	5 (11)	7 (12)
80 000-99 999	5 (11)	9 (16)
≥100 000	10 (23)	15 (26)
Medical Variables		
Age at initial diagnosis, mean ± SD (range), y	47.8 ± 10.0 (29-71)	47.1 ± 10.2 (28-66)
Age at metastatic diagnosis, mean ± SD (range), y	51.4 ± 10.0 (33-73)	51.1 ± 10.5 (30-72)
Disease-free interval, mean ± SD (range), mo	42.9 ± 33.9 (0-146.1)	47.8 ± 37.3 (0-162.3)
Time from metastatic diagnosis to study entry, mean ± SD (range), mo	32.1 ± 52.5 (1.7-244.7)	23.3 ± 28.0 (1.0-138.5)
Estrogen receptor negative, No. (%)	5 (11)	11 (19)
Treatment for metastatic disease as of study entry, No. (%)		
Chemotherapy	18 (41)	25 (43)
Hormonal therapy	37 (84)	47 (81)
Dominant site of metastasis at study entry, No. (%)		
Chest wall	13 (30)	16 (28)
Bone	17 (39)	27 (47)
Viscera	14 (32)	15 (26)

There were no statistically significant differences between any demographic or medical variables. One patient in the treatment group did not provide information on household income.

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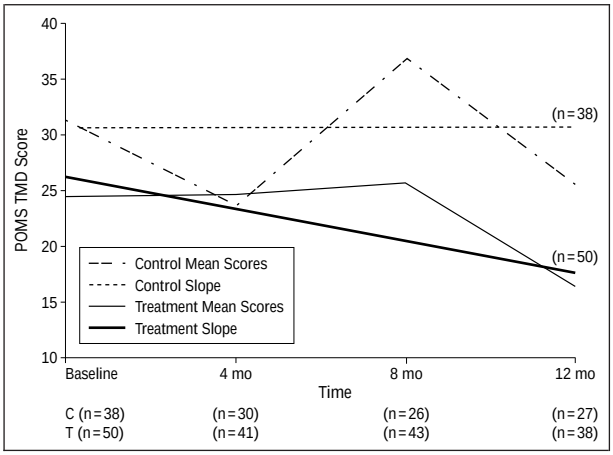

Figure 1. *Profile of Mood States total mood disturbance (POMS TMD) mean scores and mean slopes as a function of condition and time (fit to real time in months). Secondary analysis corrects for last assessment before death. C indicates control group; T, treatment group.*

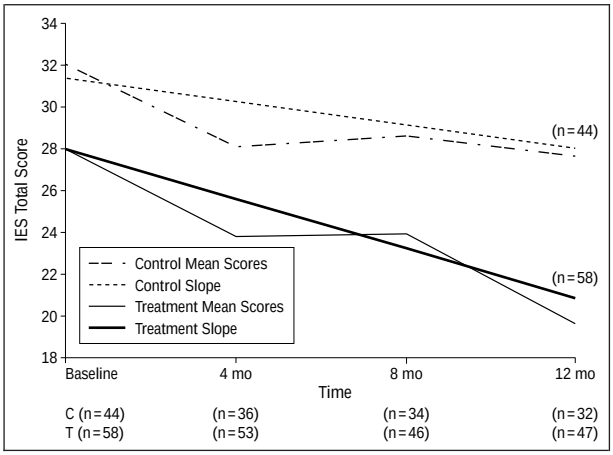

Figure 2. *Impact of Event Scale (IES) mean total scores and mean slopes as a function of condition and time (fit to real time in months). C indicates control group; T, treatment group.*

therapy will reduce mood disturbance, thereby replicating earlier findings.[20] The second aim is to test the hypothesis that 1 year of supportive-expressive group therapy will reduce trauma symptoms of intrusion and avoidance.

RESULTS

EFFECTS OF GROUP THERAPY ON MOOD DISTURBANCE

Primary Analysis

Using the General Linear Model procedure, the difference between treatment and control groups did not reach statistical significance ($F_{1,95}=1.69$, $P=.20$). The mean slope of change in POMS scores over time significantly differed by site ($F_{2,95}=3.94$, $P=.02$), but there were no significant site × treatment interactions ($F_{2,95}=1.88$, $P=.16$). As expected, the baseline POMS score was significantly related to the mean slope of POMS scores, with women with the greatest mood disturbance at baseline improving the most during the 12 months after randomization in the treatment and control conditions ($F_{1,95}=27.30$, $P<.001$).

Secondary Analysis

When we excluded the final follow-up assessment occurring within 1 year of death, women in the treatment condition showed a significantly greater decline in the mean slope of POMS scores ($F_{1,85}=5.34$, $P=.02$) compared with those in the control condition, with an effect size of 0.25. Exclusion of the final follow-up assessment because it occurred within 1 year of death resulted in 4 control women and 6 treatment women being dropped from the analysis. These 10 women had only 2 assessments, with the second assessment occurring within 1 year of death. The results of the secondary analyses on the POMS are presented in **Figure 1**.

EFFECTS OF GROUP THERAPY ON TRAUMATIC STRESS SYMPTOMS

Primary Analysis

Group therapy treatment showed a statistically significant reduction in trauma symptoms compared with the control group (**Figure 2**). Women in the group therapy condition showed a significantly greater decline in mean IES total scores ($F_{1,90}=4.63$, $P=.03$) compared with those in the control condition, with an effect size of 0.25. Furthermore, there was a significant difference in the slope of IES total scores across the sites ($F_{2,90}=4.39$, $P=.02$) but no significant site × treatment interactions ($F_{2,90}=0.57$, $P=.57$). The baseline IES total score was significantly related to the slope of change on the IES ($F_{1,90}=34.79$, $P<.001$), with the women who at baseline reported the highest traumatic stress symptoms on the IES showing the greatest reduction of symptoms over time.

Secondary Analysis

Although we found a treatment effect for the IES when all assessments were included, we chose to examine what the magnitude of the effect would be when we excluded the final follow-up assessment occurring within 1 year of death. We found that women in the treatment condition again showed a significantly greater decline in the mean slope of the IES total scores ($F_{1,81}=6.01$, $P=.01$) compared with those in the control condition, with an effect size of 0.33. Although the magnitude of the effect is stronger when the final follow-up assessment just before death is excluded, we did not test to see whether it is statistically significantly stronger than when these assessments are included. Three control participants and 6 treatment participants were lost to the analysis because they had only 2 assessment points, with the second occurring within 1 year of death.

Table 2 shows the baseline scores for the POMS and the IES and their subscales by condition, along with the values for the slopes and effect sizes.

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Table 2. Baseline POMS TMD and IES Total Scores, Slopes, and Effect Sizes for Primary and Secondary Analyses*

	Control Group			Treatment Group			
	Patients, No.	Baseline Score, Mean ± SD	Slope	Patients, No.	Baseline Score, Mean ± SD	Slope	Effect Size
Primary Analysis							
POMS TMD	44	32.8 ± 36.3	−0.14	58	23.8 ± 24.1	−0.21	0.03
Tension	44	10.5 ± 7.7	−0.03	58	8.4 ± 5.1	−0.05	0.04
Depression	44	11.2 ± 10.4	−0.12	58	9.0 ± 6.2	−0.15	0.04
Anger	44	7.8 ± 6.6	−0.02	58	6.7 ± 5.6	−0.13	0.21
Confusion	44	7.4 ± 5.8	−0.03	58	6.1 ± 3.9	−0.03	0
Vigor	44	15.1 ± 5.9	−0.06	58	15.5 ± 6.4	−0.05	−0.02
Fatigue	44	11.0 ± 6.5	0.01	58	8.9 ± 6.0	0.10	−0.13
Total IES	41	32.6 ± 17.3	−0.29	56	28.0 ± 12.1	−0.61	0.25
Intrusion	41	17.6 ± 9.8	−0.47	56	14.5 ± 7.5	−0.47	0
Avoidance	41	15.0 ± 9.9	0.18	56	13.4 ± 7.5	−0.14	0.31
Secondary Analysis							
POMS TMD	40	31.3 ± 37.6	0.07	52	24.6 ± 24.2	−0.70	0.25
Tension	40	10.4 ± 7.9	0.04	52	8.4 ± 5.3	−0.09	0.19
Depression	40	10.9 ± 10.8	−0.02	52	9.4 ± 6.2	−0.26	0.27
Anger	40	7.4 ± 6.8	0.01	52	7.3 ± 5.7	−0.16	0.27
Confusion	40	7.3 ± 6.0	0.02	52	6.2 ± 3.9	−0.08	0.29
Vigor	40	15.3 ± 6.1	−0.03	52	15.6 ± 6.4	0.09	−0.17
Fatigue	40	10.6 ± 6.7	−0.01	52	8.9 ± 6.2	−0.02	0.01
Total IES	38	32.0 ± 17.6	−0.29	50	28.5 ± 12.3	−0.76	0.33
Intrusion	38	16.9 ± 9.9	−0.45	50	14.9 ± 7.8	−0.46	0.01
Avoidance	38	15.1 ± 10.1	0.16	50	13.6 ± 7.7	−0.29	0.42

**POMS TMD indicates Profile of Mood States total mood disturbance; IES, Impact of Event Scale.*

COMMENT

This study evaluated the effectiveness of 1 year of supportive-expressive group psychotherapy for reducing mood disturbance and traumatic stress symptoms in women with metastatic breast cancer. The primary analyses, which included all available assessments, indicated that there was a treatment effect for trauma symptoms but not mood disturbance. When follow-up assessments undertaken within 1 year of the patient's death were excluded in the secondary analyses, there was a significant decline in trauma symptoms and mood disturbance for the treatment condition compared with the control condition. The magnitudes of these effects were small to moderate. In the primary and secondary IES analyses, additional analyses of the subscales showed that the overall reduction in symptoms in the intervention group was carried by a strong and significant decline in avoidance symptoms.

Coping with cancer-related trauma symptoms has been recognized as a troublesome aspect of living with metastatic breast cancer for some patients.[3,4,16,49] Although supportive-expressive group psychotherapy[36,43] was not developed specifically to address the treatment needs of a traumatized sample, it contains ingredients thought to be critical to treatment for trauma, a focus on coping with life threat, coupled with exposure to the feared stimuli and integration of the traumatic material into the patient's life.[50-52] Supportive-expressive group psychotherapy directly challenges patients' tendencies to withdraw and avoid the implications of their condition. The importance of reducing avoidance in cancer patients has been confirmed in several studies.[53-56]

In the present study, exclusion of the death-proximal assessments increased the significance of the POMS and the IES findings. This finding underscores the implications of a recent study (L.D.B. et al, unpublished observations, 1999) that examined the course of mood disturbance and other psychosocial outcomes in the subset of this metastatic sample who had died and found a marked increase in distress at the last assessment before death, regardless of condition. This may have implications for other studies[28,57] that did not find significant treatment effects of group psychotherapy in patients with advanced cancer, particularly those in longer-term studies, in which the proportion of patients who die is typically higher.

The small to moderate effect sizes may raise questions regarding the cost-effectiveness of this intervention. Given the importance of alleviating distress in this population, however, these modest differences in outcome suggest that there is clinical value in the intervention.

The primary analysis of the POMS in the present study represents an attempt to replicate the treatment effect on mood disturbance in the original study reported by this laboratory.[20] The present study used the same treatment protocol, and the treatment was administered or supervised by one of the primary therapists of the original study (D.S.), so we think it is unlikely that the outcome difference is accounted for by a failure to adequately adhere to the treatment protocol.

There are ways in which the present study differs from the original study that may be related to outcome differences. A variety of sociocultural changes since the time of the first study, conducted in the 1970s, may have altered characteristics of the potential participant popu-

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lation and thereby affected aspects of patient recruitment. In the original study,[20] all patients were referred by physicians (because support groups were uncommon and their utility was untested), and some participants had to be encouraged to participate. In the present study, more than 40% of participants were self-referred. Because of the widespread dissemination of information in the past 20 years regarding the benefits of cancer support groups, participants may also have had expectations about outcome that were not present in earlier studies. Almost three quarters of the present sample indicated a preference for randomization to the treatment group at baseline, whereas there was no such preference in the original study.[20] Thus, it is possible that the participants in the present study were more receptive to the intervention. However, the control group also had greater access to outside support groups, and this may have decreased the mood disturbance differences between the treatment and control groups.

There are several limitations to the present study. Although the POMS has demonstrated sensitivity to treatment-related changes in several short- and longer-term outcome studies,[20,23,26] the fact that it measures mood, a relatively transient characteristic susceptible to influence by a variety of factors,[58] may make it a less than optimal measure of stable long-term psychosocial adjustment. Another limitation is that participants in the present study were asked to complete an extensive battery of measures at multiple assessment points. This assessment burden may have precluded recruitment of participants who believed that they were unable to meet these requirements and therefore may limit the generalizability of the findings. Given the design of the study, we also have no way of knowing what specific aspects of the intervention may have contributed to the treatment effect. Finally, we cannot rule out the possibility that the difficulty in showing a primary treatment effect on the POMS is due to the intervention itself and not the measure.

In summary, we found that women with metastatic breast cancer in a supportive-expressive group therapy intervention experienced a significantly greater decline in traumatic stress symptoms in 1 year compared with women randomized to the control condition. When the impact of the last assessment before death was removed, both mood disturbance and traumatic stress symptoms declined significantly more for participants in the treatment condition than for those in the control condition. Future research should examine potential moderators and mediators of these psychosocial treatment effects, determine whether group therapy affects patients' adherence to medical treatment, and determine whether group psychotherapy has a beneficial impact on longevity in patients with metastatic breast cancer, as has been previously reported.[31] Our laboratory is currently conducting such a survival analysis in this sample.

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