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Supportive-expressive group therapy for women with metastatic-breast cancer: Improving access for Australian women through use of teleconference

Abstract

While supportive-expressive group therapy (SEGT) has been found to be effective in significantly reducing distress associated with life threatening illness, the challenge in Australia is to develop a means of providing supportive interventions to rural women who may be isolated both by the experience of illness and geographical location. In this study an adaptation of SEGT was provided to women with metastatic breast cancer (N=21) who attended face to face or by telephone conference. Participants showed significant gains on standardised measures of well-being, including a reduction in negative affect, $\eta^2 = .34$, p < .01 and an increase in positive affect (less vigour), $\eta^2 = .19$, p < .05 (Affects Balance Scale) over a 12-month period. A reduction in intrusive and avoidant stress symptoms (Impact of Event Scale) was also observed over 12 months however, this difference was not significant, $\eta^2 = .13$, p = .10. These outcomes suggest that SEGT delivered in an innovative way within a community setting, may be an effective means of moderating the adverse effects of diagnosis of metastatic breast cancer while improving access to supportive care for rural women. These results are considered exploratory, as the study did not include a matched control group.

Keywords: metastatic cancer, breast cancer, psychosocial, support groups, supportive-expressive group therapy, telephone

There is evidence that the diagnosis of metastatic breast cancer results in high levels of psychological morbidity, including depression, anxiety and traumatic stress responses (Burke & Kissane, 1998; Turner, Kelly, Swanson, Allison, & Wetzig, 2005). There is also evidence that the psychosocial care of women with metastatic breast cancer is lacking (Coristine, Crooks, Grunfeld, Stonebridge, & Christie, 2003; Parle, Gallagher, Gray, Akers, & Liebert, 2001; Scholten, Weinlander, Krainer, Frischenschlager, & Zielinski, 2001). Recent Australian studies of women with metastatic breast cancer found the highest unmet needs were in the psychological and health information domains (Aranda et al., 2005) and that compared to a heterogeneous group of cancer patients (Sanson-Fisher et al., 2000), women with metastatic breast cancer expressed greater need for counselling and support services.

Given the high incidence of breast cancer in developed countries, the life-long risk of recurrence and the emergence of metastatic breast cancer as a chronic illness, requiring management over many years for large numbers of women, there is a need to develop a range of effective psychosocial support services for women with metastatic breast cancer aimed at improving quality of life and meeting the unmet psychological and other needs which have been identified. There is the additional challenge in a country like Australia to develop effective ways of delivering psychosocial support interventions to women in rural and regional areas, as compared to urban women, they may be doubly isolated by their illness and geographical location. The incidence of breast cancer in Australia is similar to that of other developed countries, being 83.2 new cases per 100,000 population in 2002 (AIHW& NBCC, 2006). Breast cancer is the leading cause of cancer death in women in Australia. As one of the most decentralised States in Australia, Queensland is an ideal site to evaluate this innovative model of service delivery. Forty-one per cent of women diagnosed with breast cancer in Queensland live in a rural area (Hill et al., 1999).

Supportive-expressive group therapy (SEGT) with women with metastatic breast cancer has been demonstrated, in randomised controlled studies, to be effective in ameliorating emotional distress (Classen et al., 2001; Goodwin et al., 2001; Spiegel, Bloom & Yalom, 1981), improving coping (Spiegel et al., 1981), and reducing pain and fatigue (Goodwin et al., 2001; Spiegel & Bloom, 1983; Spiegel et al., 1981), especially in women who presented with more distress (Classen et al., 2001; Goodwin et al., 2001) or higher pain levels (Goodwin et al., 2001) on entry to the group. A recent Australian randomised controlled trial found that while SEGT did not prolong survival, it improved quality of life, ameliorated and prevented new DSM-IV depressive disorders, reduced hopeless-helplessness, trauma symptoms and improved social functioning (Kissane et al., 2007).

The benefits and feasibility of telephone support groups for cancer and other patient populations, including decreased isolation, improved social support and coping, have been described in a small number of studies (Colon 1996; Curran & Church, 1998; Curran & Church, 1999; Rounds et al., 1991;), however few studies have evaluated their effectiveness or efficacy compared to face to face groups. Heiney et al. (2003) found similar therapeutic processes to traditional face to face groups evident in a 6 week telephone group for women with primary breast cancer, but surprisingly in a related study, deterioration in quality of life (QOL) and mood at three month follow up was observed compared to the control group (Heiney et al., 2003a).

Audio teleconferencing compared to other real time technologies, including video conferencing that is delivered from fixed sites, or computer based technologies that depend on fast reliable broadband and computer literacy, is a convenient and flexible means of accessing a group, particularly for rural women or sick women, as they can call in from wherever they happen to be – at home, in hospital, visiting family or friends. Thus, combining face to face and telephone delivery in a support group for women with metastatic breast cancer could not only increase access to psychosocial support for rural and sick women, it could also enable rural women to benefit from the experience of urban women, who have greater access to specialist treatment and resources.

In this paper we report on a long term, professionally led supportive-expressive group for women with metastatic breast cancer conducted in Brisbane, Queensland, where women are able to attend face to face or using the telephone. The aim of this study was to assess the clinical effectiveness of the intervention by determining if changes in positive and negative mood dimensions and stress symptoms after 12 months attendance was consistent with outcomes of controlled studies with a similar population, using similar standardised measures, or normative data where available.

Method

Participants

The original sample consisted of 34 women who participated in a supportiveexpressive group for women with advanced breast cancer from August 2001 to September 2005. Inclusion in the group/study was on the basis of diagnosis of metastatic breast cancer and a reasonable expectation that women would be well enough to participate in the group for at least one year. Women with primary or node positive breast cancer were excluded from participation in the group because of the difference in prognosis compared to women with metastatic breast cancer.

The data of 13 women were excluded from the 12 month analysis: seven women died prior to completing the 12 month assessment, three died six months after completion, one woman was too ill to complete it, and two women withdrew from the group prior to completion. Death within six months of the final assessment may confound 12 month assessment outcomes because of increased pain and psychological distress in the last year of life, due to end stage disease (Butler et al., 2003). The low attrition rate, of 2 women over a 4 year period is notable, suggesting that the group was highly cohesive and valued by the women who joined it.

The final sample of 21 had a mean age of 50.46 years (SD = 6.44 years, R = 42.75-63.58 years). The median time since breast cancer diagnosis was 38 months (M = 53.1 months, SD = 49.2 months), and median time since diagnosis of metastasis was 6 months (M = 17 months, SD = 23.7 months). Of the participants, 17 were married (81%), two were divorced (10%), one was separated from their spouse (5%), and one was single. Ninety-five percent of the sample had completed ten years of education or more. Seven women (29%) had dependent children.

Nine women (43 %) lived in Brisbane and six (29 %) lived approximately 100 to 200 kms (or one to two hours drive) from Brisbane. Six women (29 %) lived in rural areas, four in coastal towns up to 1500 kms from Brisbane, and two on properties or farms. Participants attended a mean total of 26.10 sessions (SD = 9.84, R = 10-44 meetings) over the 12 month study period. Ten women attended more than 70 percent of sessions face to face, and nine women attended more than 70 percent of sessions using the telephone. As might be expected, women who lived in or nearer to Brisbane attended more sessions using the telephone. Most women used both methods of access at some time, as only three rural women did not attend face to face, and all but one of the Brisbane women telephoned into the group. Reasons for urban women using the telephone included fatigue or illness, with some women ringing in from their bedside, hospital and even oncology ward while having chemotherapy.

Description of Service

The group is a weekly supportive-expressive group conducted by two female group therapists (Psychiatrist/Social Worker (MO'B) 2001 - 2003; Social Worker (MO'B)/Occupational Therapist 2004 onwards) each with postgraduate clinical training in individual and group psychotherapy and over 20 years clinical experience, but no previous experience of group work with cancer patients.

The group, a brief account of which has been given elsewhere (Beacham et al., 2005), is similar to SEGT described by Kissane et al (2004) and Spiegel and Classen (2000) except that it is delivered by telephone as well as face to face, meets for an hour per week instead of 90 minutes, and is offered as a clinical service rather than as part of a clinical trial. Similarly, the framework is open-ended with new women being admitted to the group over time, the format unstructured, with no set topics and the agenda set by participants, and participants being encouraged to have social contact outside the group. SEGT aims to encourage participants to confront and express feelings about having a life threatening illness, to develop new supportive relationships to help overcome isolation and to review priorities in life (Spiegel & Spira 1991).

Using the telephone to deliver the group requires some accommodations, but generally the group functions much the same as a face to face group. The teleconference unit is placed in the middle of the room. A white board is used to list women attending (face to face or by telephone) and record apologies (which are important as members worry that absence may be due to illness), and is an aid to remembering who is on the telephone. Speakers are encouraged to identify themselves by name, until voice recognition is developed. New members are invited to 'introduce' themselves at their first session. In the absence of visual cues therapists may check from time to time how group members are feeling, however the emotional state of group members, even those on the telephone, can often be gauged by tone of voice, silence etc.

New members are asked to provide a narrative and photograph of themselves for circulation to all members. This is designed to increase cohesion between face to face and telephone members. Once women are settled in the group they are given the contact details for other group members to facilitate additional contact outside the group. Social activities organised by group members include a 'coffee group' after the formal group and occasional BBQs attended by group members (including rural women who travel to these events), partners, and families.

Recruitment to the group was by referral from oncologists, surgeons, breast care nurses, a cancer helpline, other cancer support groups, other women in the group and self-referral. The group was promoted to potential referrers and women through brochures, newsletters and presentations. The optimal size for a group such as this is 12 however at times there were as many as 15 women in attendance.

Measures

The Derogatis Affects Balance Scale (ABS) (Derogatis, 1996) measures eight different mood dimensions, including four positive (joy, contentment, vigour, and affection) and four negative (depression, anxiety, guilt, and hostility) affects. In this self-report measure 40 adjectives are presented and participants rate the degree (using a 5 point scale: ranging from *never* to *always*) to which they have experienced the emotion during the past two weeks. The ABS provides eight individual positive and negative

affect totals, plus a positive and negative affect total which represent a summation of the positive and negative subscales, respectively. All affect dimensions range from zero to 20, with increased well-being associated with higher scores on the positive dimensions, and lower scores on the negative dimensions. Derogatis (1996) provided normative data for the ABS for an adult non-patient population.

The Impact of Event Scale (IES) (Horowitz, Wilner, & Alvarez, 1979) is a 15 item self-report measure that assesses the occurrence of intrusive (7 items) and avoidant (8 items) symptoms as a result of a stressful event. Participants are asked to indicate on a four-point scale (*not at all, rarely, sometimes* and *often*) the extent to which they have experienced symptoms during the past two weeks in relation to a stressful event. In the current study the stressful event referred to the member's experience of metastatic breast cancer. Item scores are summed to generate individual intrusive and avoidant totals, plus a total IES score indicating severity of symptoms. Scores on the intrusive and avoidant subscales range from 0 - 35 and 40 respectively, with higher scores indicating increased incidence of the stress response. In the current study, the IES analyses used participant's mean intrusion and avoidance scores which allowed equivalent comparison of the two subscales.

An example of an intrusive item is "I have thought about the problem when I didn't mean to", while an avoidant item is "I tried not think about the problem". The IES has been shown to discriminate a variety of traumatised groups from non-traumatised groups (see Briere, 1997 for review). Horowitz (1982) identified low, medium, and high IES total score cut-offs. Scores below 8.5, between 8.6 - 19, and above 19 indicate low, moderate, and high levels of symptoms, respectively. Further, Corcoran and Fisher (2000) suggest that scores above 26 on either subscale suggest moderate to severe impact of symptoms. Briere and Elliot (1998) using a sample of 505 participants from the general population found that an intrusion or avoidance total of 26 represented a percentile equivalent of 95.

These measures were selected because they have been used extensively in studies of cancer patients and would therefore prove useful for comparison with the present cohort.

Procedure

To assess eligibility and interest in joining the group, women were assessed individually prior to entry to the group, either face to face or by telephone, in an interview conducted by the two group therapists. At the interview women were invited to participate in the study and either given or sent an information and consent form together with a brochure about the group, written guidelines for participation within the group, information about the telephone link up and questionnaires (ABS & IES). It was made clear to all prospective participants that participation in the study was voluntary and would not affect their membership of the group. All of the women seeking membership of the group between August 2001 and September 2004 volunteered to be involved in the study and provided written consent. Women were asked to complete the questionnaires at six monthly intervals thereafter. Questionnaires were either sent to women for completion, or completed over the telephone. If women chose the latter option a nonclinical staff member administered the questionnaire.

Ethics approval was sought and obtained from Royal Brisbane Hospital and the University of Queensland. However, as the study did not continue as a funded research project but rather as a routine clinical evaluation, continuing ethics approval was neither sought nor required for the full duration of the project. Nonetheless informed consent and data management protocols continued to be implemented in accordance with the principles of the approved protocol throughout the life of the project. *Statistical analysis*

Repeated-measures ANOVAs were used to determine differences between means at baseline and at 12 months. Alpha was set at .05. Effect sizes (η^2) are reported for all significant effects and are interpreted in terms of Cohen's (1988) guidelines (η^2 : 0:01 (small), 0.06 (medium), and 0.14 (large). Analyses were completed using SPSS 12.0.1.

Results

Descriptive data

Raw and standardised scores for the ABS are reported in Table 1. When compared to the available adult non-patient ABS normative data (Derogatis, 1996), mean baseline subscale scores, except those for vigour and depression were equal to or within one standard deviation of the normative sample means. The baseline vigour score was more than one standard deviation below the normative sample mean (7th percentile). The baseline depression score was more than one standard deviation above the mean (88th percentile). At 12 months, levels of vigour remained low, while depression had decreased and was at the 69th percentile.

Total IES score at baseline was 29.42, while at 12 months the score was 24.62 (see Table 1). According to Horowitz's (1982) cut-offs (>19), both the baseline and 12 month scores indicate a high level of stress symptoms. At baseline, four participants had intrusive subscale scores (>26) and five participants had avoidant subscale scores (>26) that indicated they were experiencing moderate to severe impact of symptoms (Corcoran & Fisher, 2000). At 12 months, two participants met the criterion for moderate to severe avoidant symptoms.

Repeated Measures Analyses

ABS results.

To analyse changes in positive and negative affect (ABS) over time, a two-bytwo repeated-measures ANOVA was conducted using the variables of Affect (positive affect, negative affect) and Time (baseline, 12 months). The dependent variable was raw positive and negative ABS total scores. This analysis indicated significant main effects for Affect, F(1,20) = 15.85, $\eta^2 = .44$, p < .01, and Time, F(1,20) = 4.69, $\eta^2 = .19$, p < .05, and a significant Affect x Time interaction, F(1,20) = 7.02, $\eta^2 = .26$, p < .05. Post hoc comparisons indicated that the total negative affect score was significantly lower at 12 months compared to baseline, t(20) = 3.20, $\eta^2 = .34$, p < .01. In contrast, the total positive affect score had increased at 12 months, however this change was not statistically significant ($\eta^2 = .13$, p = .10). This interaction effect is displayed in Figure 1.

In the initial ABS analysis, reported above, the positive affect total included the outcomes of the four positive affect subscales (i.e., joy, contentment, affection, and vigour). Given the trend for improvement in positive affect across time and the small sample size of the current study, a second analysis was run with the vigour subscale total removed from the positive affect total. An inspection of the data revealed that vigour, relative to other subscales, was less amenable to change across time. Also, prior research has shown that levels of vigour remain low across time in women with metastatic breast

cancer (Classen et al., 2001; Goodwin et al., 2001).

This second analysis indicated main effects for Affect, F(1,20) = 5.83, $\eta^2 = .27$, p < .05, and Time, F(1,20) = 6.73, $\eta^2 = .25$, p < .05, and a significant Affect x Time interaction, F(1,20) = 9.12, $\eta^2 = .31$, p < .01. A post hoc comparison found that total positive affect (excluding vigour) was significantly higher at 12 months, t(20) = -2.19, $\eta^2 = .19$, p < .05. *IES results*.

To analyse changes in IES stress symptoms over time, a two-by- two repeatedmeasures ANOVA was conducted using the independent variables of Stress Symptom (intrusion, avoidance) and Time (baseline, 12 months). The dependent variable was mean intrusion and avoidance scores. Mean intrusion and avoidance scores across baseline and 12 month periods are displayed in Figure 2. This analysis indicated a significant main effect for Stress Symptom, F(1,20) = 25.04, $\eta^2 = .56$, p < .001, with levels of intrusion being significantly higher than levels of avoidance. Despite there being a reduction of stress symptoms across time, there was no main effect for Time ($\eta^2 =$.13, p = .10). This outcome may be the result of low observed power (.37) due to the small number of participants included in this study. The Cohen's d effect sizes associated with the difference in avoidance, intrusion, and IES total scores across the two time periods indicate a small positive effect present for the intrusion and IES total scores (as presented in Table 2). Similar baseline/12 month effect sizes have been identified by Spiegel et al. (1999) for both of the subscales and IES total score, in a group of women with primary breast cancer involved in a 12 week psychotherapy support group. Both our study and Spiegel et al. (1999) found that a larger effect size was associated with the improvement in intrusive stress symptoms relative to the effect size associated with avoidant stress symptoms.

Discussion

This study aimed to assess the clinical effectiveness of a SEGT for women with metastatic breast cancer delivered in a community setting, using an innovative mode of delivery (telephone and face to face), by comparing baseline scores and outcomes after 12 months in the group and comparing effect sizes for changes in this group with those reported in controlled studies using similar standardised measures.

The sample was generally homogenous on demographic characteristics but displayed greater variance on factors of time since diagnosis of breast cancer and metastasis. Difference was also evident in the place of residence of women, which in turn influenced the way that women attended sessions (telephone or face to face). These differences may have contributed to greater variance amongst group member's responses to measures, as evidenced by higher standard deviations. Variance in severity of disease may also have been a factor, since as a community based intervention it was not possible to control for variations in clinical characteristics of participants.

Overall, we found significant improvement in positive (when vigour was excluded) and negative mood dimensions on the ABS after 12 months in the group. Intrusive and avoidant stress responses, measured using the IES, were reduced at 12 months compared to baseline. While this effect was not significant, a small effect size was associated with the reduction of intrusive stress responses across time.

Women in the current sample displayed low levels of vigour over time. Other studies have reported similar outcomes in women with metastatic breast cancer and found

that group psychosocial support (across one year) did not improve levels of vigour in this population (Classen et al., 2001; Goodwin et al., 2001).

Another area of interest in relation to the ABS outcomes is that group involvement elicited more improvement in negative affects ($\eta^2 = .34$) relative to positive affects (vigour excluded: $\eta^2 = .19$). Importantly, normative data showed that levels of 'depression' were reduced after 12 months to be within an average range. This suggests that the intervention may have been more effective in alleviating distress than in improving positive emotions. This outcome highlights the complexity of measuring affect in this particular population, as affect is not only transient but multidimensional, and when combined with possible somatic influences as a result of illness, interpreting outcomes is complex. Voogt et al. (2005) argued the importance of differentiating the absence of positive affect and the presence of negative affect when assessing psychological distress, and that measures which focus mainly on negative emotions (i.e., depression and anxiety), may miss mood disorders in patients with advanced cancer.

With regard to the IES, women responded with higher levels of intrusive stress responses compared to avoid ant stress responses across both time periods. This result is perhaps to be expected, as individuals who are more likely to respond to traumatic events using avoidant behaviours are perhaps less likely to join a group where confrontation of emotional distress is encouraged. Plass and Koch (2001) similarly found significantly higher scores on the intrusion subscale of the IES and higher distress generally in participants accessing psychosocial support compared to non-participants in a heterogenous sample of cancer patients, which were predominantly breast cancer patients. Grande et al. (2006) found that cancer patients attending a community peer support group compared to patients who were not in a group, used more active, adaptive coping strategies, but were also more distressed and anxious than non participants. It may be hypothesised that stress response may influence the take up of therapeutic support groups or therapeutic interventions in general. The fact that women in our study selfselected to join the group rather than being randomised to this condition may indicate a biased sample towards women who are more distressed but use less avoidant coping strategies.

Baseline scores on the IES in the current study are comparable to baseline scores in controlled studies of SEGT with women with metastatic breast cancer, including Classen et al. (2001) and Giese-Davis & Spiegel (2001) who reported mean scores on the Intrusion subscale between 14.9 and 16.9 and the Avoidance subscale between 13.5 and 15.1, respectively. Our outcomes converge with the findings of these authors to suggest that women in this population experience moderate to high stress symptoms (according to the criteria of Horowitz, 1982). One factor that may moderate stress symptoms is time since diagnoses of metastasis. Evidence for this comes from a local study that found that recently diagnosed women with metastatic breast cancer reported considerably lower IES scores than those of our own study, where the time since diagnosis was longer (M=17 months). Thus women may become more distressed over time following diagnosis, and experience a greater need for psychosocial support interventions than is evident at diagnosis.

While it is not possible to compare outcomes directly with those of controlled studies, due to differences in sample characteristics and methodology, it would appear that results of the current study demonstrate comparable outcomes to controlled studies in

terms of improved psychological wellbeing and that a SEGT intervention delivered within a community setting using both face to face and telephone delivery, may be an effective means of moderating the adverse effects of metastatic breast cancer.

Our experience has demonstrated that it is not only feasible to deliver a group intervention by telephone, thus enabling rural women to access psychosocial support that would be otherwise unavailable to them, using the telephone also facilitates participation by sick women, enabling them to remain in the group up until the time of their death. Given the low take up of support groups noted by other researchers (Taylor, Falke, Shoptaw & Lichtman, 1986) it is important that women who would benefit from participation in a group such as this are not denied the opportunity. Interventions that facilitate participation by overcoming geographic and practical impediments should be encouraged.

There are important limitations to the current study. Without a control group we cannot be certain that the outcomes described are attributable to the SEGT intervention. Any perceived benefits could be due to other factors, including members use of anti depressant medication; involvement in other psychological treatments, for example, individual or family counselling; or attendance at other groups or workshops. However, in our experience, group members' use of other supportive interventions have been intermittent or less frequent than attendance at our group.

Despite this limitation, there is some evidence that the SEGT intervention has attributed to the improvement in mood dimensions and to a lesser degree stress responses reported in the current study. First, the outcomes are consistent with prior findings concerning SEGT with women with metastatic breast cancer. Second, group members demonstrated the importance of the group to their well-being, as evidenced by the low attrition rate and their willingness to travel long distances to attend face to face. For example, three women who lived approximately 100 to 200 kms from Brisbane attended more than 70% of their sessions face to face and three of the six rural women (who lived more than 500 kms from Brisbane) attended at least once face to face. Further, women attended the group despite fatigue and illness, telephoning into the group from their sickbed at home or in hospital and initiated various social activities that provided further engagement between group members and their families. We would suggest that, for the majority of women in the sample, regular attendance at the group, as evidenced by attendance records and the development of supportive relationships with other women in the group have been key factors contributing to improved psychological well-being.

Another weakness of the study was small sample numbers, limiting the power of statistical analysis and meaningful comparison of variables such as face to face versus telephone participation. While nine women in the sample predominantly attended group sessions using the telephone and ten predominantly attended face to face, most women have used both mediums at one time or another, hence making comparison of face to face and telephone participation even more complex.

Finally, while we would not suggest that groups of this kind are beneficial for every woman with metastatic breast cancer, for those who seek out this form of psychosocial support, our impression is that it can provide much needed support to improve psychological well-being.

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Table 1

Raw scores (and t- scores^{}) and Standard Deviations for the positive and negative*

	Baseline Scores		12 Month Scores	
M	SD	M	SD	
11.33 (43)	3.51	12.86 (47)	3.90	
11.05 (43)	3.71	12.43 (46)	3.44	
8.81 (35)	3.66	9.62 (38)	5.09	
12.48 (40)	3.44	13.38 (43)	3.26	
43.67	12.82	48.29	13.58	
9.19 (55)	3.93	7.05 (50)	4.26	
7.52 (62)	4.64	4.90 (55)	3.85	
6.62 (59)	4.77	4.00 (50)	3.21	
6.71 (54)	3.81	5.19 (50)	3.95	
30.05	15.46	21.14	14.03	
17.52	8.76	14.29	9.05	
11.90	11.88	10.33	8.35	
29.42	19.69	24.62	15.87	
	<i>M</i> 11.33 (43) 11.05 (43) 8.81 (35) 12.48 (40) 43.67 9.19 (55) 7.52 (62) 6.62 (59) 6.71 (54) 30.05 17.52 11.90 29.42	M SD 11.33 (43) 3.51 11.05 (43) 3.71 8.81 (35) 3.66 12.48 (40) 3.44 43.67 12.82 9.19 (55) 3.93 7.52 (62) 4.64 6.62 (59) 4.77 6.71 (54) 3.81 30.05 15.46 17.52 8.76 11.90 11.88 29.42 19.69	M SD M 11.33 (43) 3.51 $12.86 (47)$ 11.05 (43) 3.71 $12.43 (46)$ $8.81 (35)$ 3.66 $9.62 (38)$ $12.48 (40)$ 3.44 $13.38 (43)$ 43.67 12.82 48.29 $9.19 (55)$ 3.93 $7.05 (50)$ $7.52 (62)$ 4.64 $4.90 (55)$ $6.62 (59)$ 4.77 $4.00 (50)$ $6.71 (54)$ 3.81 $5.19 (50)$ 30.05 15.46 21.14 17.52 8.76 14.29 11.90 11.88 10.33 29.42 19.69 24.62	

dimensions of the Affects Balance and the Impact of Events Scale**

*where *M*=50, *SD*=10 ** normative data not available for IES raw scores



Figure 1. Estimated marginal means of raw ABS positive and negative affect totals at baseline and 12 Month periods.



Figure 2. Estimated marginal means of mean IES Intrusion and Avoidance scores at Baseline and 12 Month periods.

Table 2.

A comparison of effect sizes (Cohen's d) associated with baseline and post- intervention change in subscales of the Impact of Event Scale (IES) for the current study and those of Spiegel et al., (1999)

Study	IES: Avoidance	IES: Intrusion	IES: Total
	$M_{1a}(SD_1)$	$M_1(SD_1)$	$M_1(SD_1)$
	$M_{2b}(SD_2)$	$M_2(SD_2)$	$M_2(SD_2)$
	Cohen's d	Cohen's d	Cohen's d
Current Study	11.90 (11.88)	17.52 (8.76)	29.42 (19.69)
	10.33 (8.35)	14.29 (9.05)	24.62 (15.87)
	.15	.36	.27
Spiegel et al.,	16.1 (6.32)	14.5 (10.54)	24.8 (13.7)
(1999) ^c	14.7 (6.96)	11.9 (5.94)	19.4 (12.87)
	.21	.30	.41

Note $_{a}M_{1}$ score at baseline

_b M₂ score at post-intervention

e studied women with primary breast cancer. Pre and post (at 12 Months) 12 wks group SEGT intervention

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