

## ABSTRACT

### Introduction

A growing number of psychosocial interventions are being offered to cancer patients during and after their medical treatment. Here, we examined whether Mindfulness-Based Stress Reduction (MBSR), a stress management course, helps women to cope better with stress and illness once their breast cancer treatment is completed. Our aim was to understand how MBSR may



with 4 variables in the model at an alpha level of 0.05 and a power of 0.80.

### 2.3 Intervention: MBSR Program

The MBSR program (described in Kabat-Zinn) was provided by the same instructor (PLD) to 5 different groups of 10–15 women per group, who met weekly for 2.5-hour classes over 8 consecutive weeks to learn mindfulness meditation and stress management techniques. Patients received a home practice manual and 4 compact discs created by the instructor to teach these meditation practices: body scan, sitting meditation, hatha yoga, and meditation involving visual imagery. The structured classes progressively taught means of coping with stress through meditation practice and dialogue about the practice in and out



PHDVXUHV VKRZHG VLJQL correction for multiple testing (Bonferroni correction ZLWK DQG WHVWV \p=0.0042): depressive symptoms (<0.0001), perceived stress (<0.0001), and medical symptoms (<0.0001).

TABLE I Participant (n = 59) demographics

Variable	Value
Age (years)	
Mean	56.4±10.2
Range	28–79
Time since completion of breast cancer treatment (months)	
Mean	28.9±58.8
Range	2–340
Years of education (%)	
High school leaving	7 (11.9)
College degree	13 (22.8)
Undergraduate degree	26 (44.1)
Master's degree	9 (15.3)
Doctorate	4 (6.8)
Cancer stage (%)	
Stage 0	2 (3.4)
Stage 1	17 (28.8)
Stage 2	20 (33.9)
Stage 3	2 (3.4)
Stage 4	6 (10.2)
Unknown	12 (20.3)

Measures of distraction coping decreased (<0.0001); and mindfulness, comprehensibility, manageability, and total sense of coherence (all increased <0.0001).

The associations between change scores and the changes in process and outcome variable from pre- to post-MBSR. Using the Bonferroni approach to control for type 1 error across the 36 correlations, value of

The results of the correlation analyses revealed (ble III). Most notably, increases in mindfulness scores were related to reductions in stress (<0.0001), depression (<0.0001), and emotional coping (<0.0001) and to increases in total sense of coherence (p < 0.0001).

Hierarchical regression was then performed to predict the main outcomes (change score) using 2 process variables. As shown in Table the results of the hierarchical linear regression analyses, with age and time since completion of treatment forced into the model as covariates, revealed that neither of these potential confounders predicted a reduction in stress  $F_{2,56} = 0.814, p = 0.449$ . However, when, in the next step, the model included the change score and the total change score, the model reached variance in the prediction of the change in stress:  $F_{4,56} = 11.858, p < 0.0001$ .

#### 4. DISCUSSION

MBSR for patients with other types of chronic illness

TABLE II Impact of the Mindfulness-Based Stress Reduction program on outcome and process measures (n = 57)

Variable	Mean score		Difference	d Value	t Value	p Value
	Pre-program	Post-program				
<b>Outcome measures</b>						
Depression	16.30±9.91	10.26±7.56	6.04	0.57	4.25	0.0001
Perceived stress	17.95±6.05	14.07±6.17	3.88	0.64	4.83	0.0001
Medical symptoms	19.77±12.08	11.96±7.99	7.80	0.77	5.46	0.0001
<b>Process measures</b>						
Mindful awareness	3.91±0.82	4.35±0.68	0.44	-0.77	-5.59	0.0001
Distraction coping	26.23±5.49	28.25±5.75	2.02	-0.47	-3.51	0.001
Palliative coping	23.72±4.39	24.25±3.94	0.53	-0.14	-1.08	0.286
Instrumental coping	33.68±5.07	33.21±5.67	0.47	0.13	1.00	0.320
Emotional coping	22.91±7.07	19.84±6.66	3.07	0.54	4.07	0.0001
Comprehensibility	42.74±8.89	46.67±6.80	3.93	-0.54	-3.96	0.0001
Manageability	47.89±7.80	49.67±6.19	1.77	-0.27	-1.96	0.055
Meaningfulness	42.93±7.32	46.18±6.72	3.25	-0.62	-4.62	0.0001
Sense of coherence (total)	133.56±19.61	142.51±15.08	8.95	-0.52	-4.51	0.0001

Tm (0.0001)Tj ET EMC /Span <0046csEFFv020628 87.3859 ,





patients discharged from medical treatment,  
PD\ ¿ OO D KHDOWK VHUYLFH JDS SRVVLEO\ DOORZLQJ WKHVH  
SDWLHQWV WR OHDUQ WR QDYLJDWH DQG VWD\ DÀRDW LQ ZKDV  
may seem to be the large and small waves of their  
transformed lives.

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