



# Effects of mindfulness-based cognitive therapy on shame, self-compassion and psychological distress in anxious and depressed patients: A pilot study

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**Objectives.** The tendency to experience shame or guilt is associated differentially with anxiety and depression, with shame being associated with greater psychopathology. Correlational studies have shown self-compassion to be related to lower shame and rumination, and mindfulness-based interventions increase self-compassion. Therefore, mindfulness-based interventions may decrease shame. This pilot study aimed to assess the association of shame, rumination, self-compassion, and psychological distress and the effects of a mindfulness-based intervention on these measures in a clinical sample.

**Design.** Single-group design with pre-test and post-test measures.

**Method.** Thirty-two service users who experienced clinically diagnosed depressive or anxiety disorders in a mindfulness-based cognitive therapy programme were assessed before and twenty-two after therapy with measures of shame-proneness, external shame, rumination, self-compassion, and psychological distress.

**Results.** Shame-proneness and external shame were positively correlated with self-coldness, and external shame was positively correlated with stress and depressive symptoms. Self-compassion increased and self-coldness decreased, while shame-proneness, rumination, anxiety, and stress symptoms decreased from pre- to post-treatment. There was no significant reduction in depressive symptoms, guilt-proneness, or external shame.

**Conclusion.** Our preliminary findings suggest that mindfulness-based approaches may be helpful in increasing self-compassion and reducing shame-proneness in mixed groups of anxious and depressed patients. Controlled studies of the effects of mindfulness-based interventions on shame in clinical populations are warranted.

## Practitioner points

- Shame-proneness and external shame showed different patterns of relationship with depressive and stress symptoms and with self-compassion.

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- Shame-proneness decreased to a greater extent than external shame decreased following participation in an MBCT group.
- Mindfulness-based interventions may benefit shame-proneness to a greater extent than external shame.

Shame is a self-conscious emotion, in which the entire self is the central focus of negative evaluation and the self is judged as being inferior, undesirable, or worthless in some way (Tangney & Dearing, 2002; Tangney, Stuewig, & Mashek, 2007). Shame is conceptually distinct from guilt, which has been argued to refer to a negative evaluation of one's behaviour, and is less damaging to the core of a person's identity.

The distinction between shame and guilt is important for psychopathology, according to the body of research which shows that dispositional measures of shame predict symptoms of depression and anxiety. A meta-analysis of 108 studies focussed on the association between shame, guilt, and depression (Kim, Thibodeau, & Jorgensen, 2011) showed that 'guilt-free' shame was positively associated with measures of depression at a moderate-to-large effect size, whereas the association between 'shame-free' guilt and depression was not significant. Shame also predicts symptoms of anxiety (Gilbert, 2000; Pineles, Street, & Koenen, 2006; Tangney, Wagner, & Gramzow, 1992), whereas the tendency to experience guilt was less strongly correlated with anxiety (Gilbert, 2000; Pineles, *et al.*, 2006; Tangney *et al.*, 1992).

Meaningful distinctions can also be made between different types of shame. Gilbert (1998) proposed that internal shame, the negative views of the self as seen through one's own eyes, could be meaningfully distinguished from external shame, which refers to negative views of the self as seen through the eyes of others. Gilbert (2007) proposed that external shame triggers a sense of threat of social exclusion or rejection and is more salient to psychopathology than internal shame. The meta-analysis of shame, guilt, and depression (Kim *et al.*, 2011) supported the distinction between internal and external shame, in that external shame was more strongly associated with depressive symptoms than various measures of internal shame. This meta-analysis characterized the Test of Self-Conscious Affect (TOSCA-3; Tangney, Dearing, Wagner, & Gramzow, 2000), which measures the tendency to experience shame in different scenarios, as a measure of internal shame. We will use the term shame-proneness to refer specifically to shame measured by the TOSCA so that we do not claim generalizability of our findings to internal shame.

Self-compassion can be contrasted with shame in the sense that it adopts an accepting and kind attitude towards the self in contrast to the self-judgment inherent in shame, whether that self-judgment is from the self or perceived in the minds of others. The most widely used measure of this concept (Neff, 2003a) defines self-compassion as a healthy attitude towards oneself involving three bipolar components: self-kindness versus self-judgement, which refers to being kind and understanding towards oneself rather than harsh and self-critical; common humanity versus isolation, which refers to the recognition that failure and suffering is a shared part of common humanity as opposed to feeling alone in one's imperfections; and mindfulness versus overidentification, which refers to holding thoughts and feelings in awareness as opposed to becoming overly engaged and identified with one's experience.

Self-compassion is an approach-oriented emotion regulation strategy (Neff, 2003b) which is linked to positive indicators of well-being and reduced psychological distress (Barnard & Curry, 2011), in that greater self-compassion is associated with greater optimism, life satisfaction, social connectedness, and emotional intelligence as well as less

thought suppression, rumination, depression, and anxiety (Neff, 2003b; Neff, Kirkpatrick, & Rude, 2007; Neff & Vonk, 2009). A meta-analysis by MacBeth and Gumley (2012) found a large effect size ( $r = -.54$ ) for the negative association between self-compassion and psychopathology across 20 studies, with similar size effects for the association of self-compassion with depression, anxiety, and stress. Although effect sizes did not differ between student and clinical samples, clinical participants were less represented in the meta-analysis, as four of the studies were based on a clinical sample.

Few studies have investigated the relationship between shame and self-compassion. Barnard and Curry (2012) found that self-compassion was negatively correlated with shame-proneness in a sample of members of the clergy ( $r = -.55$ ), but unrelated to guilt. Similarly, Ferreira, Pinto-Gouveia, and Duarte (2013) reported a negative association between external shame and self-compassion ( $r = -.36$ ) in female patients with eating disorder, while Woods and Proeve (2014) found that shame-proneness was strongly negatively linked to self-compassion ( $r = -.59$ ), after controlling for guilt-proneness, in a sample of undergraduate students.

Innovative compassion-focussed approaches have the potential to decrease shame and increase self-compassion. For example, Gilbert and Procter (2006) trialled Compassionate Mind Training (CMT), an approach designed for people who experience chronic problems with high shame and self-criticism, with six participants who had severe and complex difficulties. There were significant reductions in shame, self-criticism, depression, and anxiety. In addition, a recovery programme based on CMT trialled with individuals experiencing mental disorders in a secure hospital resulted in small changes in external shame, but no changes in self-compassion (Laithwaite *et al.*, 2009).

Interventions designed to enhance mindfulness also enhance self-compassion. Mindfulness-based stress reduction (MBSR) is a group-based intervention designed to teach participants various skills, including mindfulness meditation, body awareness, and hatha yoga (Kabat-Zinn, 1990). Across five studies, MBSR raised participants' self-compassion levels by an average of 19% (Germer & Neff, 2013). Like MBSR, mindfulness-based cognitive therapy (MBCT) also increases self-compassion. MBCT is an 8-week group-based intervention which incorporates mindfulness skills and elements of cognitive behaviour therapy (Segal, Williams, & Teasdale, 2002). MBCT has been shown to be effective in reducing relapse rates in individuals who have experienced three or more episodes of depression (Teasdale *et al.*, 2000) and may be effective in reducing symptoms in currently depressed patients (Barnhofer *et al.*, 2009), in those previously considered resistant to treatment (Kenny & Williams, 2007), and in those suffering from anxiety disorders (Kim *et al.*, 2009). Three MBCT studies yielded an increase in self-compassion by an average of 9% (Kuyken *et al.*, 2010; Lee & Bang, 2010; Rimes & Wingrove, 2011). MBSR and MBCT do not specifically address self-compassion in the content of the programme but do emphasize kindness and compassion in the attitudinal framework and stance towards experience which is adopted during these programmes (Crane, 2009). These aspects of MBCT and MBSR may perhaps particularly affect the self-kindness and common humanity components of self-compassion.

Mindfulness-based interventions may also decrease shame. Acceptance and Commitment Therapy (ACT) includes mindfulness exercises, acceptance exercises, and a change in relationship to one's thoughts. A group-based (ACT) approach was added to treatment as usual (TAU) in a randomized controlled trial with participants who had a substance use disorder (Luoma, Kohlenberg, Hayes, & Fletcher, 2012). The TAU group showed a medium-sized and significant reduction in internal shame from pre-treatment to post-treatment, which decreased to a small and non-significant effect from post-treatment to

4-month follow-up. However, the ACT group showed a small and significant improvement in internal shame from pre-treatment to post-treatment, which increased to a medium and significant improvement from post-treatment to follow-up. Finally, Galhardo, Cunha, and Pinto-Gouveia (2013) found decreases in internal and external shame after a 10-week Mindfulness-Based Program for Infertility, which is based on MBSR, principles of ACT, and psychological interventions for infertile patients.

Given that MBCT has an established research base for the treatment of depression and anxiety and increases self-compassion, and that mindfulness-based approaches may be effective for decreasing shame, we investigated the effect of MBCT on shame, self-compassion, and psychological distress in anxious and depressed patients referred to a specialized public agency for the treatment of anxiety and depression. To our knowledge, our study is the first to measure the effect of a group mindfulness intervention on external shame as well as shame-proneness, in patients who have experienced mental disorders of depression or anxiety. Because a key aim of the study was to investigate the differential effects of MBCT on two types of shame, it was feasible to conduct a pilot study of a single-group intervention.

The first aim of our study was to investigate the relationships between self-compassion, shame, and psychological distress in anxious and depressed patients. We used the Self-Compassion Scale (SCS; Neff, 2003a, 2003b) to measure self-compassion. Because positive and negative subscales of the SCS are differentially related to psychopathology (Muris & Petrocchi, 2017) and recent work provides a strong recommendation that the SCS should be measured as two factors (Brenner, Heath, Vogel, & Credé, 2017), we used *self-compassion* and *self-coldness* derived from the SCS.

A second aim was to examine the effects of MBCT on self-compassion, shame, and psychological distress in these patients. We also examined ruminative responding, which is a maladaptive emotion regulation strategy which is negatively correlated with self-compassion (Neff, 2003a, 2003b; Neff & Vonk, 2009; Odou & Brinker, 2014), and positively correlated with external shame (Gilbert, Cheung, Irons, & McEwan, 2005).

We hypothesized that the self-compassion factor would be negatively correlated (and self-coldness positively correlated) with shame-proneness, rumination, and psychological distress (depression, anxiety, and stress) and that external shame would have a stronger positive association with depression than shame-proneness or guilt-proneness. With regard to the effects of MBCT, we hypothesized that self-compassion would increase from pre- to post-treatment, whereas shame-proneness, rumination, and psychological distress would decrease from pre to post-treatment. Given the focus of external shame on evaluation by others, we expected a weaker change in external shame compared to shame-proneness following the MBCT intervention.

## Method

### Participants

Thirty-nine eligible clients participated in one of three consecutive MBCT group programmes between October 2013 and June 2014. Of the 32 participants who completed the pre-test measures, 19 were female (59.4%) and 13 (40.6%) were male. Their ages ranged from 25 to 70 years ( $M = 49.8$ ;  $SD = 13.6$ ). Most participants (77.4%) reported being born in Australia, and all clients identified as speaking English at home. In terms of highest education level, 48.4% reported completing year 12 or less, 32.3% reported some tertiary education and 19.4% reported graduating with a tertiary degree. With regard to employment status, 32% were currently employed, 12% were unemployed,

12% were studying, 36% received a pension, and 8% were retired. Primary diagnoses of participants included the following: recurrent depressive disorder unspecified (30%), recurrent depressive disorder with current episode (17.9%), dysthymia (12.8%), major depressive disorder (5.1%), general anxiety disorder (10.3%), social anxiety disorder (2.6%), panic disorder (2.6%), bipolar affective disorder in depressed phase (7.7%), and other (e.g., ADHD, hypochondriasis; 10.3%). Eighteen participants met DSM-V criteria for a secondary diagnosis (46.2%).

The MBCT programmes were delivered through a public mental health clinic in Adelaide, South Australia. Clients with a mood or anxiety disorder were invited to participate in an MBCT course and were given an individual pre-course interview to determine whether they met criteria to take part in the programme. Inclusion criteria for the MBCT course were as follows: meeting criteria for a DSM-V recurrent or chronic mood disorder and/or generalized anxiety disorder or a treatment-resistant anxiety disorder being maintained by ruminative thinking, being 18 years or older and able to commit to an 8-week group-based programme, and daily mindfulness practice for 40 min. Exclusion criteria included current substance abuse that would interfere with meditation practice and active suicidal ideation where there was no external monitoring therapist.

Post-treatment data were provided by 22 participants (56.4% participation rate). Loss of participants is accounted for as follows: three participants chose not to participate in the study, 12 participants completed less than four sessions, and two participants did not complete the post-treatment questionnaires. Consistent with research to date (Kuyken *et al.*, 2008), an adequate dose of MBCT was defined as participation in  $\geq 4$  of eight MBCT sessions.

### Measures

Participants were asked to specify their age, gender, country of birth, language spoken at home, employment status, education level, suburb of residence, and the person who referred them to the MBCT programme.

#### *Self-Compassion Scale (Neff, 2003a, 2003b)*

The SCS is a 26-item self-report scale designed to measure an individual's propensity to have a compassionate stance towards the self. The scale assesses three dimensions of self-compassion with six subscales: self-kindness, self-judgement, common humanity, isolation, mindfulness, and overidentification. Responses are given on a 5-point Likert scale ranging from 1 (*almost never*) to 5 (*almost always*). The SCS has demonstrated good test-retest reliability and construct validity using measures of life satisfaction, social connectedness, perfectionism, depression, and anxiety (Neff, 2003a, 2003b). We used the 13-item *self-compassion* and *self-coldness* factors (Brenner *et al.*, 2017) in our analyses. Internal consistencies for pre-test and post-test measures were  $\alpha = .94$  and  $\alpha = .88$  for self-compassion and  $\alpha = .92$  and  $\alpha = .89$  for self-coldness, respectively.

#### *Test of Self-Conscious Affect-3 (TOSCA-3 short form; Tangney et al., 2000)*

The TOSCA-3 is a measure of shame-proneness and guilt-proneness. The scale consists of 11 scenarios of common situations that are likely to provoke feelings of shame or guilt, with each scenario followed by four possible responses to the situation. Participants indicate how likely they would be to react in each of the ways described on a 5-point Likert

scale ranging from 1 (*not likely*) to 5 (*very likely*). Although the TOSCA-3 measures detached and externalizing responses, only the shame-proneness and guilt-proneness scales were used in this study. The TOSCA-3 demonstrated good internal consistency for both shame-proneness ( $\alpha = .79$ ) and guilt-proneness ( $\alpha = .79$ ) in this study.

*Other As Shamer Scale (Goss, Gilbert, & Allan, 1994)*

The 18-item Other As Shamer Scale (OAS) is a measure of external shame, which refers to how an individual thinks others see him or her. Participants are asked to indicate the frequency of their feelings, experiences, and evaluations about how others judge the self on a 5-point Likert scale ranging from 0 (*Never*) to 4 (*Almost always*). The OAS showed high internal consistency in this study ( $\alpha = .94$ ) and has previously demonstrated construct validity using measures of inferiority, submissive behaviour, depression, and anxiety (Gilbert, McEwan, Bellew, Mills, & Gale, 2009; Goss *et al.*, 1994). Higher scores on the OAS indicate greater external shame.

*Depression Anxiety and Stress Scale-21 (DASS-21; Lovibond & Lovibond, 1995)*

The DASS-21 is a short-form measure of psychological distress. The scale consists of three 7-item subscales that measure the extent to which an individual has experienced depression, anxiety, and stress over the past week as rated on a 4-point Likert scale ranging from 0 (*Did not apply to me at all*) to 3 (*Applied to me very much or most of the time*). Each subscale has excellent internal consistency in addition to the total scale ( $\alpha = .93$ ) and has demonstrated good construct validity (Henry & Crawford, 2005). Internal consistencies were  $\alpha = .84$  for stress,  $.86$  for anxiety, and  $.92$  for Depression. The DASS-21 score is doubled to conform to the full version DASS-42 norms, with higher scores indicating greater psychological distress.

*Ruminative Response Scale (Nolen-Hoeksema & Morrow, 1991)*

The Ruminative Response Scale (RRS) is a 22-item measure that assesses three types of responses to depressed mood: focusing on the self, the symptoms, and the possible consequences and causes of these symptoms. Participants were asked to rate how often they engaged in particular behaviours or typically reacted to personal loss on a 4-point scale ranging from 1 (*almost never*) to 4 (*almost always*). The RRS demonstrated good internal consistency ( $\alpha = .90$ ) and has shown convergent validity in past research (Nolen-Hoeksema & Morrow, 1991). Higher scores on the RRS indicate greater ruminative responses.

**Procedure**

The study was approved by the Human Research Ethics Committee, School of Psychology, University of Adelaide, and by the Queen Elizabeth Hospital Human Research Ethics Committee. Written informed consent was obtained prior to participation in the study. All participants referred to the MBCT courses had an intake interview, conducted by the teachers of the course, one of whom (MK) is also a co-author, who has more than 10 years' experience in teaching MBCT courses. The other teacher is trained in MBCT and has been teaching courses for 5 years, with ongoing supervision. The teachers are both experienced clinicians, one a psychiatrist and the other a clinical psychologist. Diagnoses

were made by reviewing participants' completed Psychiatric Diagnostic Symptom Questionnaire (Zimmermann & Mattia, 2001) and by clinical interview.

Participants were mailed a pre-questionnaire package or given the baseline questionnaire at the pre-course interview to complete and return via mail before the first MBCT class. Post-treatment questionnaires were given at the completion of the last MBCT class, and participants were asked to return them via mail (responses ranged from 1 to 4 weeks). No participants were paid for their involvement in the study.

The MBCT programme consisted of eight weekly sessions that were two and a half hours in length, conducted in groups of 11–14 participants. The intervention was led by trained MBCT therapists (a psychiatrist or clinical psychologist) and followed the manualized MBCT programme developed by Segal *et al.* (2002). Participants were asked to carry out approximately 40 min of home practice per day, based on skills acquired in each session.

## Results

Data were inspected for non-normal distributions, outliers, and missing data. Missing data reduced cases available for post-treatment analyses. No outliers were detected. Due to departures from normality for SCS Self-Coldness, TOSCA Guilt, and DASS-21 Anxiety at pre-treatment, and DASS-21 Anxiety, SCS mindfulness subscale, and Rumination at post-treatment, we used bias-corrected and accelerated bootstrapping for correlational and pre-post analyses.

Independent samples *t*-tests for gender conducted on the pre-treatment SCS factors, OAS, shame-proneness and guilt-proneness, RRS, and psychological distress scales were not statistically significant. Zero-order correlations of age with SCS factors, OAS, shame-proneness and guilt-proneness, RRS, and psychological distress scales were also not statistically significant.

Pre-treatment Pearson correlations between OAS, shame-proneness, guilt-proneness, self-compassion, external shame, rumination, and psychological distress are shown in Table 1. Due to the high correlation between shame-proneness and guilt-proneness ( $r = .72$ ), partial correlations of shame-proneness or guilt-proneness with other variables are presented. Self-coldness was significantly positively correlated with shame-proneness, while self-compassion was negatively but not significantly correlated. Guilt-proneness was uncorrelated with either SCS factor. Self-compassion total was uncorrelated with external shame (OAS), while self-coldness was significantly positively correlated.

With regard to measures of psychopathology and rumination, self-coldness was significantly positively correlated with stress, depressive symptoms, and rumination, while self-compassion was significantly negatively correlated only with rumination.

External shame was positively and significantly correlated with depressive and stress symptoms. Shame-proneness and guilt-proneness were not significantly correlated with measures of psychopathology or rumination. Contrary to our expectations, external shame was negatively partially correlated with shame-proneness, but had a positive, non-significant zero-order correlation of .14. External shame was positively partially correlated with guilt-proneness, though these correlations were not significant.

### Intervention outcomes

Participants who provided post-treatment questionnaires ( $n = 22$ ) were compared with those completed pre-test questionnaires but dropped out of the study ( $n = 10$ ). There was no pattern of difference in diagnoses between the two groups. Independent samples *t*-tests for all measures showed a significant difference only for external shame,

**Table 1.** Zero-order and partial correlations for pre-treatment measures ( $n = 32$ )

Measure	1	2	3	4	5	6	7	8	9
1. T-S									
2. T-G	.72**								
3. OAS	-.15 <sup>a</sup>	.34 <sup>b</sup>							
4. SCm	-.24 <sup>a</sup>	.03 <sup>b</sup>	-.01						
5. SCo	.49 <sup>a**</sup>	.08 <sup>b</sup>	.35*	-.60**					
6. S	.19 <sup>a</sup>	.05 <sup>b</sup>	.45*	-.05	.40*				
7. A	.24 <sup>a</sup>	-.12 <sup>b</sup>	.10	.11	.20	.62**			
8. D	.10 <sup>a</sup>	.17 <sup>b</sup>	.37*	-.21	.48**	.56**			
9. RRS	.32	.05 <sup>b</sup>	.14	-.41*	.78**	.48**	.45*	.49**	
M	37.94	48.56	34.65	2.47	3.74	22.38	12.56	18.81	57.97
SD	7.14	5.25	13.25	0.84	0.75	9.69	9.70	11.80	13.40

Notes. T-S = TOSCA Shame; T-G = TOSCA Guilt; OAS = Other As Shamer Scale; Self-compassion Scale; SCm = Self-Compassion 13-item, SCo = Self-Coldness 13 item; DASS-21: S = Stress, A = Anxiety, D = Depression; RRS = Ruminative Responses Scale.

<sup>a</sup>Controlling for TOSCA Guilt ( $df = 28$ ).

<sup>b</sup>Controlling for TOSCA Shame ( $df = 28$ ).

\* $p < .05$ ; \*\* $p < .01$ .

$t(30) = 2.46, p = .02$ . Those who dropped out of the study obtained higher scores on the OAS ( $M = 42.10$ ) compared to those who completed post-treatment questionnaires ( $M = 30.27$ ).

Related-samples  $t$ -tests were used to determine whether there were significant pre-treatment to post-treatment changes for the 22 participants who completed post-treatment measures. As shown in Table 2, participants reported a statistically significant increase in self-compassion and a significant decrease in self-coldness. Cohen's  $d$  effect sizes for related samples (Dunlap, Cortina, Vaslow, & Burke, 1996) for self-compassion was large ( $d > 0.8$ ), and of medium size ( $d > 0.5$ ) for self-coldness.

There were significant post-treatment decreases in anxiety and stress symptoms as well as rumination as expected, with medium effect sizes for stress and rumination. There was no significant effect for depressive symptoms. As expected, shame-proneness showed a statistically significant decrease in medium effect size following treatment, but external shame and guilt-proneness did not decrease significantly.

Table 3 shows correlations between measures used in the study at post-treatment. Correlations between shame-proneness and other study variables were changed in magnitude or direction following treatment. The correlation with depressive symptoms was statistically significant, while the correlation with self-coldness was no longer significant. The direction of relationship between shame-proneness and external shame was changed post-treatment to a positive but not statistically significant correlation. In addition, the direction of relationship between guilt-proneness and external shame was changed post-treatment to a negative but not statistically significant correlation. The correlations between external shame and a number of other variables changed following treatment. External shame showed a stronger positive correlation with self-coldness and was negatively correlated with self-compassion post-treatment. External shame also showed large positive correlations with stress and depressive symptoms and with rumination.

**Table 2.** Pre-treatment and post-treatment means, standard deviations, t-test, and effect sizes for all measures

Measure	Pre-test	Post-test	Intervention change	
	<i>n</i> = 22 M (SD)	<i>n</i> = 22 M (SD)	<i>t</i> <sup>a</sup>	<i>d</i>
SCm	2.33 (0.80)	3.07 (0.62)	5.01**	1.01
SCo	3.72 (0.80)	3.27 (0.68)	-3.33**	-0.59
OAS	30.27 (13.92)	28.72 (11.19)	-0.49	-0.12
T-S	39.14 (7.30)	34.91 (5.66)	-2.70*	-0.64
T-G	48.55 (4.93)	46.55 (4.93)	-1.72	-0.41
D	17.73 (12.80)	16.00 (10.69)	-0.68	-0.15
A	10.55 (8.78)	7.18 (5.54)	2.12*	-0.43
S	20.36 (9.56)	15.27 (7.40)	2.27*	-0.59
RRS	55.36 (13.45)	47.45 (14.39)	2.73*	-0.57

Notes. M = mean; SD = standard deviation; *t* = *t*-test; *d* = Cohen's *d* effect size. Self-compassion Scale: SCm = Self-Compassion 13-item, SCo = Self-Coldness 13-item; OAS = Other as Shamer Scale; T-S = TOSCA Shame; T-G = TOSCA Guilt; DASS-21: D = Depression, A = Anxiety, S = Stress; RRS = Ruminative Responses Scale.

<sup>a</sup>*df* = 21.

\**p* < .05; \*\**p* < .01 (two-tailed).

**Table 3.** Zero-order and partial correlations for post-treatment measures (*n* = 22)

Measure	1	2	3	4	5	6	7	8	9
1. T-S									
2. T-G	.75**								
3. OAS	.31 <sup>a</sup>	-.41 <sup>b</sup>							
4. SCm	-.28 <sup>a</sup>	.19 <sup>b</sup>	-.58**						
5. SCo	.13 <sup>a</sup>	-.05 <sup>b</sup>	.64**	-.83**					
6. S	.43 <sup>a</sup>	-.16 <sup>b</sup>	.64**	-.61**	.50*				
7. A	.09 <sup>a</sup>	.25 <sup>b</sup>	.21	-.22	.27	.43*			
8. D	.57 <sup>a**</sup>	-.56 <sup>b*</sup>	.71**	-.59**	.49*	.73**	.27		
9. RRS	-.06	-.01 <sup>b</sup>	.61**	-.65**	.77**	.46*	.37	.50*	
M	34.91	46.55	29.14	3.07	3.27	15.27	7.18	16.00	47.45
SD	5.66	4.93	11.29	0.62	0.68	7.40	5.54	10.69	14.39

Notes. T-S = TOSCA Shame; T-G = TOSCA Guilt; OAS = Other As Shamer Scale; Self-compassion Scale: SCm = Self-Compassion 13-item, SCo = Self-Coldness 13-item; DASS-21: S = Stress, A = Anxiety, D = Depression; RRS = Ruminative Responses Scale.

<sup>a</sup>Controlling for TOSCA Guilt (*df* = 19).

<sup>b</sup>Controlling for TOSCA Shame (*df* = 18).

\**p* < .05; \*\**p* < .01.

## Discussion

In those participants who completed the MBCT programme, there was a significant increase in self-compassion, with a large effect size, and a significant decrease in self-coldness, with a medium effect size. There were also significant decreases in shame-

proneness, anxiety, stress, and rumination, with medium effect sizes for shame-proneness, stress, and rumination. However, there were no significant changes in external shame, depression, or guilt-proneness.

We found the largest change following MBCT for self-compassion, which is consistent with previous studies of MBCT (Kuyken *et al.*, 2010; Lee & Bang, 2010; Rimes & Wingrove, 2011), although these studies measured the SCS as a single scale. Scores on self-coldness also decreased with a medium effect size, suggesting that MBCT participation is associated particularly with increased self-compassion rather than self-coldness. Given evidence that positive mental health and psychopathology are correlated but separate (Lamers, Westerhof, Glas, & Bohlmeijer, 2017), MBCT may contribute especially to aspects of positive mental health such as self-compassion. Our finding that self-compassion improved relative to self-coldness supports the usefulness of reporting findings for the SCS as two separate factors, as recommended in recent studies (Brenner *et al.*, 2017; Muris & Petrocchi, 2017). Overall, our findings support the idea that increased self-compassion is an important effect of MBCT.

Changes in self-compassion and self-coldness may also be related to their significant associations with rumination, which was correlated with self-compassion in previous studies (Neff, 2003a, 2003b; Neff & Vonk, 2009; Odou & Brinker, 2014). Measuring the SCS using two factors shows that rumination was associated with both, although more strongly with self-coldness. Like self-coldness, rumination decreased with a medium effect size, consistent with Radford, Crane, Eames, Gold, and Owens (2012), who found significant improvements in self-compassion and rumination over an 8-week MBCT programme in mixed diagnosis patients.

Our study is one of few to assess the effect of mindfulness-based interventions on shame. For shame-proneness, we found a decrease of medium effect size. The mechanism of change cannot be demonstrated due to the design of our study. However, a plausible explanation for the reduction in shame-proneness is that MBCT led to reduced identification with shame-related thoughts. At pre-treatment, shame-proneness was positively correlated with rumination and with self-coldness, which has content concerned with overidentification with thoughts. However, shame-proneness was less strongly correlated with both rumination and self-coldness at post-treatment.

Our findings were different for external shame than for shame-proneness. External shame was higher in those participants who dropped out of the study, and there was no significant change in external shame following MBCT for study completers. Participants who dropped out of the study obtained a similar OAS mean score to depressed participants in previous studies (Gilbert, 2000; Gilbert *et al.*, 2009). Therefore, it is possible that the lack of significant change on the OAS can be explained by the fact that study completers obtained lower baseline OAS scores. However, against this explanation is the finding of Galhardo *et al.* (2013) of significant decreases in OAS scores following a 10-week mindfulness-based programme, for participants whose baseline scores were lower than those of completers in our study.

An alternative explanation, although not consistent with the findings of Galhardo *et al.* (2013), is that the content and process of MBCT are less suitable for addressing external shame than shame-proneness, and different treatment approaches may be required to address different types of shame. With their particular focus on internal phenomena, mindfulness-based interventions may lead to change in one's identification with self-evaluation characteristic of shame and their bodily manifestations. However, external shame concerns how we believe we are regarded by others and may need to be addressed by greater engagement with and challenge of those beliefs. Therefore, cognitive–

behavioural intervention with an emphasis on beliefs about evaluation by others may be a plausible approach for addressing external shame. For example, Brazão *et al.* (2015) found that a cognitive-behavioural intervention for prison inmates resulted in a medium effect size difference between treatment and control groups and reliable change in more than half of the treatment group at post-treatment for external shame. Finally, approaches that emphasize compassion for self and others may be helpful in addressing external shame. Laithwaite *et al.* (2009) found that CMT (Gilbert & Procter, 2006) resulted in small changes in external shame in individuals who experienced severe mental disorders. Compassion-based intervention may address self-judgement and other aspects of self-coldness, which is correlated with external shame.

We also expected that symptoms of psychological distress would decrease following the MBCT intervention, consistent with previous findings (Barnhofer *et al.*, 2009; Kim *et al.*, 2009). We found significant and medium effect size reductions in stress and anxiety symptoms, but not for depressive symptoms. This finding runs contrary to a meta-analytic review (Strauss, Cavanagh, Oliver, & Pettman, 2014), which showed effects of MBCT on depressive symptom severity in those suffering from current depression and anxiety. Examination of individual changes in depressive symptoms following our intervention showed that participants with anxiety disorders decreased in depressive symptoms, but those with recurrent depression showed a mixed pattern of increased symptoms, decreased symptoms, or no change, although an increase was slightly more common in this group. Therefore, the difference in our findings from other studies may reflect the slight majority of participants with recurrent depression. We did not record negative life events in the study and cannot therefore exclude their impact on depressive symptoms in recurrently depressed participants, and we were not able to follow-up participants to assess the consistency of our findings some months after the intervention. The inconsistent findings may also be related to our use of the DASS-21 to measure depressive symptoms, whereas most studies included in the meta-analysis used the Beck Depression Inventory-Second Edition (BDI-II) as an outcome measure of depression. Previous research (Page, Hooke, & Morrison, 2007) has found that the BDI-II is more sensitive to changes in depressive symptoms than the DASS-21.

We also hypothesized and found that external shame would show a higher correlation than shame-proneness with depressive symptoms (Kim *et al.*, 2011). However, the non-significant relationship between shame-proneness and depression at pre-treatment in the present study was unexpected. Our study correlated 'guilt-free' shame-proneness and external shame, whereas Kim *et al.* (2011) did not report such partial correlations. The full correlation in our study showed that there was a moderate relationship ( $r = .33$ ) between shame-proneness and depression, with results more closely matching that of Kim *et al.* (2011). This demonstrates that guilt-proneness inflated the relationship between shame-proneness and depression in the present study, whereas previous non-clinical research has shown the opposite effect (Tangney & Dearing, 2002). Perhaps guilt-proneness in clinical samples is less benign than in non-clinical samples (Tangney *et al.*, 1992).

We obtained additional unexpected findings, which suggest that our findings should be regarded as preliminary. First, external shame and shame-proneness showed a small negative partial correlation at pre-treatment, which is contrary to theoretical expectations and previous findings (Gilbert, 2000), as controlling for guilt-proneness might be expected to strengthen the relationship between the two types of shame. This relationship changed at post-treatment to a positive correlation between the two measures of shame. In addition, external shame showed a small positive but

non-significant correlation with rumination at pre-treatment but a large positive correlation with rumination, as found previously (Gilbert *et al.*, 2005), at post-treatment. Finally, external shame was more strongly related to depressive and stress symptoms, but neither shame measure was related to anxiety symptoms. We are unable to account for these results, which are at variance with previous findings regarding shame and anxiety (Gilbert, 2000; Pineles, Street, & Koenen, 2006; Tangney *et al.*, 1992).

With regard to potential limitations in our study, training and experience of the facilitators should be considered. However, we do not believe that insufficient experience or training in MBCT was a limitation as the two facilitators were well trained in delivering MBCT, had 10 and 5 years of experience, respectively, in delivering MBCT, and were active in continuing education and supervision. A second potential limitation is that one of the co-authors was a teacher for the MBCT groups, and this dual role might have influenced participant responses. However, this co-author was not involved with data analysis, and any influence of this co-author on participant responses would not be expected to result in the lack of change in depressive symptoms, which was contrary to findings in the literature and to findings with other MBCT groups at the agency.

We acknowledge a number of limitations in our study. First, the amount of daily meditation practised between MBCT sessions was not assessed during or following the intervention. Therefore, adherence to programme recommendations or participant experience of MBCT practice is not known. Our study also did not include follow-up data. As a result, one cannot determine the extent to which effects of MBCT persisted after completion of the course. In addition, an important design limitation of our study is that we did not use a matched or randomized control group design. Thus, the benefits of mindfulness practice could not be separated out from non-specific group therapeutic factors such as group cohesion and altruism.

There were also several measurement limitations of the study. Our study relied on self-report questionnaires to assess self-compassion, shame, and psychological distress. Future studies would be enhanced by triangulation with other measures. For example, Sbarra, Smith, and Mehl (2012) measured self-compassion via coding of participant audio files and ratings made by trained judges. Our study also did not assess previous meditation experience, which Baer, Lykins, and Peters (2012) found is a potential confounding variable with regard to self-compassion. Therefore, future research should assess meditation experience when exploring the effects of MBCT on self-compassion.

Other limitations concern sample size, generalizability, and attrition from the study. The small sample size in our study affected our ability to achieve statistical significance for some correlational relationships, despite correlations of .30–.40, which are regarded by convention as medium effects. In addition, findings were derived from one treatment clinic, restricting generalizability of our findings. Finally, attrition of eligible participants was almost 44%. It was not possible to follow-up those who left the programme regarding their experiences of the programme or reasons for leaving. However, we know that those who dropped out of the study after pre-treatment assessment recorded on average higher external shame scores, as noted. As changes in external shame have been recorded following other group-based interventions, the issue of whether the content or process of MBCT programmes is less acceptable to participants who experience higher external shame deserves further investigation.

Future intervention studies should include randomization to control and treatment groups, follow-up of participants following the intervention, multicentre recruitment of participants, assessment of meditation experience, measures of distress which are sensitive to changes in depressive symptoms such as the BDI-II, as well as additional

measures to self-report instruments. The possibility that MBCT may lead to changes in shame-proneness by reducing overidentification with thoughts could be assessed by administering suitable measures of rumination at the mid-point of the intervention, to enable analysis of rumination as a mediator of change in shame-proneness.

While acknowledging the limitations of our pilot study, our findings are important in that they suggest that MBCT may be effective in improving self-compassion and shame-proneness, but not external shame, in mixed groups of patients with anxiety and depression. Our findings require replication in view of acknowledged study limitations. The potential of mindfulness-based interventions for reducing shame-proneness deserves further investigation, as does the relative effectiveness of these interventions for addressing external shame.

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