



Brief report

Mindfulness-based cognitive therapy may reduce thought suppression in previously suicidal participants: Findings from a preliminary study

Silvia R. Hepburn*, Catherine Crane, Thorsten Barnhofer, Danielle S. Duggan, Melanie J. V. Fennell and J. Mark G. Williams
 University of Oxford, Oxford, UK

Objectives. Thought suppression is a strategy aimed at mental control that may paradoxically increase the frequency of unwanted thoughts. This preliminary study examined effects of mindfulness-based cognitive therapy (MBCT) on thought suppression and depression in individuals with past depression and suicidality.

Methods. In a randomized controlled trial design, 68 participants were allocated to an MBCT group or a treatment-as-usual waitlist control. Measures of thought suppression and depression were taken pre- and post-treatment.

Results. MBCT did not reduce thought suppression as measured by the White Bear Suppression Inventory, but significantly reduced self-reported attempts to suppress in the previous week.

Conclusions. Preliminary evidence suggests that MBCT for suicidality may reduce thought suppression, but differential effects on thought suppression measures warrant further studies.

Thought suppression (TS) is a mental control strategy associated with depression (Spinhoven & van der Does, 1999; see Wenzlaff & Wegner, 2000 for a review of empirical studies). When resources are available, suppression of negative material works in the short-term, but later increases negative intrusions. Undergraduates who suppress are more likely than others to develop depressive symptoms over time, especially after stressful experiences (Wenzlaff & Luxton, 2003). This study investigates how mindfulness-based cognitive therapy (MBCT) affects TS in previously suicidal individuals, who are at high risk of developing future depression.

Previously suicidal people typically have intrusions with strong negative affect, which they may be particularly motivated to suppress (Lynch, Cheavens, Morse, &

* Correspondence should be addressed to Dr Silvia Hepburn, Department of Psychology (PO Box 78), Institute of Psychiatry, King's College London, De Crespigny Park, London SE5 8AF, UK (e-mail: silvia.hepburn@iop.kcl.ac.uk).

Rosenthal, 2004). Little research has examined TS in suicidality, but it has been associated with suicidal ideation and post-treatment outcome in depressed older adults (Rosenthal, Cheavens, Compton, Thorp, & Lynch, 2005), and self-harm in borderline personality disorder (Chapman, Specht, & Cellucci, 2005). Attempts to suppress probably exacerbate suicidal thoughts rather than controlling them.

Worry persists in individuals who believe it to be effective (Freeston, Rheame, Letarte, Dugas, & Ladouceur, 1994), and metacognitive therapy (Papageorgiou & Wells, 2001), reduces depressive rumination by targeting beliefs about its effectiveness. Although no equivalent studies have investigated beliefs about suppression, many people appear to use it deliberately to control their thoughts, and an approach which questions the effectiveness of TS may be indicated. MBCT discourages mental control and promotes adaptive ways of managing thoughts and feelings, including acceptance. Compared to suppression, acceptance reduces the aversiveness of intrusions (Marcks & Woods, 2005). We were interested in whether MBCT would reduce TS in a previously suicidal population.

MBCT (Segal, Williams, & Teasdale, 2002) is a relapse-prevention treatment combining cognitive behavioural therapy (CBT) with mindfulness training. Mindfulness can be defined as purposeful, non-judgmental and present-moment awareness (Kabat-Zinn, 1994). As part of Dialectical Behaviour Therapy, mindfulness training successfully reduces suicidal behaviour in borderline personality disorder (Linehan, 1993). MBCT also reduces depressive relapse (Ma & Teasdale, 2004; Teasdale *et al.*, 2000), the context in which most suicidal behaviour occurs (Beautrais *et al.*, 1996). MBCT may therefore be especially useful for suicidality, and a new programme was adapted for this population (Williams, Duggan, Crane, & Fennell, 2006). As many people become overwhelmed when they drop their habitual coping strategies, crisis planning is key, and 'grounding' meditations are included to help people to retain awareness of the physical present.

This process study compared short-term effects of MBCT and treatment-as-usual on TS in individuals with past suicidal depression. Volunteers were randomly allocated to receive MBCT immediately or after a delay. They were assessed pre- and post-treatment. The MBCT group was predicted to show reduced TS and residual depressive symptoms following treatment.

Method

Design

Sixty-eight patients in remission or recovery from depression with suicidality were randomized to an immediate MBCT group or a waitlist control, with stratification by suicidal history (ideation or attempt) and past depressive episodes (< 3 or 3+). They were assessed before and after the MBCT course by assessors who remained blind to group allocation. Analysis compared groups on TS and depression over time.

Recruitment

Participants aged 18–65 years were referred by clinicians or responded to community advertisements. All had experienced both depression (minimum one episode) and suicidality (suicide attempt or severe ideation with a plan). At first assessment, all met criteria for depression recovery (Frank *et al.*, 1991). Exclusion criteria included non-fluent English, receiving CBT without subsequent depressive relapse, and symptoms of substance misuse, psychosis or mania in the past 6 months.

Of 125 people who expressed interest, 44 were ineligible, and 13 withdrew. Of the remaining 68 people, 33 were allocated to the MBCT group, 35 to the waitlist control group. Twenty (61%) of the MBCT group and 23 (66%) of Controls were 'completers'. 'Non-completers' missed the post-treatment assessment (MBCT: 2, Controls: 8) or provided incomplete data (MBCT: 1, Controls: 4). MBCT group members who attended fewer than four classes were considered non-completers (Teasdale *et al.*, 2000). Non-completers were younger ($M = 38.3$, $SD = 4.25$) than completers ($M = 43.6$, $SD = 9.93$), $F(1, 66) = 3.15$, $p = .08$, but did not differ in TS or depression ($p > .10$).

Procedure

At first assessment, participants were interviewed with the Mini International Neuropsychiatric Interview (MINI; Sheehan *et al.*, 1998). Self-report questionnaires included TS and depression measures. Post-treatment assessment covered between-assessment symptoms and care, and included re-ratings of original measures.

Treatment

Control group

Control participants continued with treatment-as-usual (including medication), seeking help from GPs or other sources if they encountered difficulties. MBCT was offered to them when the study was complete.

MBCT group

The MBCT group received the new programme for suicidality, consisting of 8 weekly 2 h classes and one all-day session (6 h). Classes of up to 17 people met in university premises on weekday evenings. Daily homework (maximum 1 h) included formal audio-guided meditation, and informal practices integrating mindfulness into everyday life. Instructors were experienced CBT and mindfulness-based therapists.

Measures

Depression

The Beck Depression Inventory (BDI; Beck, Steer, & Brown, 1996) is a well-known measure of depressive symptoms with excellent reliability and validity.

Thought suppression

The White Bear Suppression Inventory (WBSI; Wegner & Zanakos, 1994) is widely used self-report measure of TS which has been included in other studies of mindfulness (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006). Following Wenzlaff and Luxton (2003), we used the suppression subscale, and included a question about short-term attempts at TS: 'In the past week, how often have you tried to suppress unwanted thoughts?'

Results

Demographics

MBCT participants ($M = 48.77$, $SD = 9.04$) were older than Controls ($M = 41.24$, $SD = 9.00$), $U = 126.50$, $Z = -2.52$, $p < .02$. Gender distribution did not differ between groups (9 males each), $\chi^2(1) = 0.01$, $p = .94$. All participants were Caucasian and most were highly educated (65% had degrees). Groups did not differ in age of completing full-time education (MBCT: $M = 19.33$, $SD = 4.27$; Control: $M = 22.00$, $SD = 6.08$), $U = 141.50$, $Z = -1.35$, $p = .18$.

Diagnosis and treatment

No participants had current depression according to diagnostic interview. No group differences existed for median past depressive episodes (four each), $U = 165.00$, $Z = -0.16$, $p = .88$, or proportion of participants with past suicide attempts (eight each), $\chi^2(1) = 0.001$, $p = .97$. The groups did not differ significantly in rates of past hospitalization, past psychotherapy, or in between-assessment psychotherapy or medication changes.

Depression

BDI scores over time are shown in Table 1. A Group (MBCT, Control) by Time (pre, post) mixed ANOVA found no group effect, $F(1, 41) = 0.02$, $p = .90$, $\eta^2 < .01$; however, a main effect of time, $F(1, 41) = 8.04$, $p < .01$, $\eta^2 = .16$, was qualified by a significant Group \times Time interaction, $F(1, 41) = 5.75$, $p < .05$, $\eta^2 = .12$. Bonferroni-corrected *post hoc* comparisons found that depression was significantly reduced over time in the MBCT group, $M_{i-j} = 6.95$, $SE = 1.94$, $p < .01$, $\eta^2 = .23$, but not in the Control group ($p = .75$).

Table 1. Group mean scores for the Beck Depression Inventory and self-reported thought suppression in the past week, pre- and post-treatment (SD)

	Pre-treatment	Post-treatment
<i>Thought suppression in the past week</i>		
MBCT	3.70 (1.30)	2.60 (1.10)
Control	3.58 (1.59)	4.12 (1.42)
<i>Beck Depression Inventory</i>		
MBCT	15.62 (13.84)	8.67 (12.00)
Control	12.83 (9.59)	12.25 (11.14)

Thought suppression

There were no pre-treatment group differences in TS as measured with the WBSI subscale (MBCT: $M = 13.15$, $SD = 3.45$, Control: $M = 13.17$, $SD = 4.87$), $F(1, 41) = 0.00$, $p > .90$, and scores were unchanged post-treatment (MBCT: $M = 12.75$, $SD = 3.35$, Control: $M = 13.26$, $SD = 4.43$). A Group (MBCT, Control) by Time (pre, post) ANOVA found no significant effects ($p > .10$). Effect sizes were extremely small (e.g. $\eta^2 = .01$).

Scores for TS in the past week are shown in Table 1. A Group (MBCT, Control) by Time (pre, post) ANOVA found no effect of time ($p = .29$), but there was a significant Group \times Time interaction, $F(1, 42) = 9.66$, $p < .01$, $\eta^2 = .18$. Bonferroni-corrected *post hoc* comparisons highlight a significant decline in the MBCT group over time, $M_{i-j} = 1.10$, $SE = 0.40$, $p < .01$, $\eta^2 = .15$, compared to no change for Controls ($p = .13$). Pre-treatment, there were no group differences ($p = .78$), but post-treatment, the MBCT group reported suppressing significantly less in the past week than Controls, $M_{i-j} = 1.52$, $SE = 0.41$, $p < .01$, $\eta^2 = .23$.

Associations between change in depression and TS

The reductions in BDI and TS in the past week are probably closely related. The key interaction in the depression ANOVA became non-significant when change in self-reported TS in the past week was covaried out, $F(1, 39) = 2.35$, $p = .13$, $\eta^2 = .05$. The equivalent interaction in the ANOVA for TS in the past week fell to non-significant trend-level when BDI change was covaried out, $F(1, 39) = 3.67$, $p = .06$, $\eta^2 = .08$.

Discussion

This study examined short-term effects of MBCT for suicidality on TS. Some support was found for the hypothesis that MBCT would reduce TS, but the WBSI measure did not yield significant findings. Self-reported TS in the past week declined significantly for the MBCT group, but not for controls. The MBCT group's depressive symptoms declined from the mild clinical range to normal levels, while controls remained unchanged. Covariate analysis suggested that changes in depression were related to changes in reported TS in the past week, though the direction of influence was unclear. If MBCT directly reduces use of TS by discouraging it in favour of adaptive alternatives, this might break vicious cycles between suppression and rumination, indirectly reducing depression. Alternatively, if MBCT directly reduces depressive symptoms, the resulting improvement in mood and cognitive control and reduction in intrusions and rumination might lead to a decline in motivation to suppress.

This study has some limitations. First, small effect sizes suggest limited power due to small samples and incomplete data (although, no relevant variables distinguished completers and non-completers). Replication with larger samples may elucidate links between TS and depression, and highlight other factors which might underlie both (e.g. working memory). Second, MBCT affected the two TS measures differently, significantly affecting one but not the other. The WBSI, being more 'trait' than 'state', may be less change-sensitive than a week-by-week measure. Both were self-report measures: a pragmatic choice within a trial examining many variables (cf. Crane *et al.*, 2008; Williams *et al.*, 2008). Future research should use on-line measures of TS to establish whether our results reflect demand effects (i.e. MBCT participants responding in compliance with mindfulness philosophy), and to further elucidate mechanisms of change in MBCT. Follow-ups are needed to examine long-term effects of MBCT on cognitive change and relapse in this population.

Preliminary evidence suggests that MBCT for suicidality may reduce TS and residual depression in the short-term. If replicated, it would suggest MBCT as a useful approach for tackling this maladaptive cognitive strategy in high-risk populations.

Acknowledgement

This research was supported by a Wellcome Trust Prize Studentship awarded to the first author for doctoral research, and a Wellcome Trust Programme Grant to the last author. The authors wish to thank Wendy Swift and Helen Doll.

References

- Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment, 13*, 27-45.
- Beautrais, A., Joyce, P., Mulder, R., Fergusson, D., Deavoll, B., & Nightingale, S. (1996). Prevalence and comorbidity of mental disorders in persons making serious suicide attempts: A case-control study. *American Journal of Psychiatry, 153*, 1009-1014.
- Beck, A. T., Steer, R., & Brown, G. (1996). *BDI-II Manual*. San Antonio, TX: The Psychological Corporation, Harcourt Brace and Company.
- Chapman, A., Specht, M., & Cellucci, T. (2005). Borderline personality disorder and deliberate self-harm: Does experiential avoidance play a role? *Suicidal and Life-Threatening Behavior, 35*, 388-399.
- Crane, C., Barnhofer, T., Duggan, D., Hepburn, S., Fennell, M., & Williams, J. M. G. (2008). Mindfulness-based cognitive therapy and self-discrepancy in recovered depressed patients with a history of depression and suicidality. *Cognitive Therapy and Research, 32*, 775-787.
- Frank, E., Prien, R., Jarrett, R., Keller, M., Kupfer, D., Lavori, P., et al. (1991). Conceptualization and rationale for consensus definitions of terms in major depressive disorder - remission, recovery, relapse, and recurrence. *Archives of General Psychiatry, 48*, 851-855.
- Freeston, M., Rheame, J., Letarte, H., Dugas, M., & Ladouceur, R. (1994). Why do people worry? *Personality and Individual Differences, 17*, 791-802.
- Kabat-Zinn, J. (1994). *Wherever you go, there are you: Mindfulness meditation in everyday life*. New York: Hyperion.
- Linehan, M. (1993). *Skills training manual for treating borderline personality disorder*. New York: Guilford Press.
- Lynch, T., Cheavens, J., Morse, J., & Rosenthal, M. (2004). A model predicting suicidal ideation and hopelessness in depressed older adults: The impact of emotion inhibition and affect intensity. *Aging and Mental Health, 8*, 486-497.
- Ma, H., & Teasdale, J. (2004). Mindfulness-based cognitive therapy for depression: Replication and exploration of differential relapse prevention effects. *Journal of Consulting and Clinical Psychology, 72*, 31-40.
- Marcks, B., & Woods, D. (2005). A comparison of thought suppression to an acceptance-based technique in the management of personal intrusive thoughts: A controlled evaluation. *Behaviour Research and Therapy, 43*, 433-445.
- Papageorgiou, C., & Wells, A. (2001). Metacognitive beliefs about rumination in recurrent major depression. *Cognitive and Behavioral Practice, 8*, 160-164.
- Rosenthal, M., Cheavens, J., Compton, J., Thorp, S., & Lynch, T. (2005). Thought suppression and treatment outcome in late-life depression. *Aging and Mental Health, 9*, 35-39.
- Segal, Z., Williams, J. M. G., & Teasdale, J. (2002). *Mindfulness-based cognitive therapy for depression: A new approach to preventing relapse*. New York: Guilford Press.
- Sheehan, D., Lecrubier, Y., Sheehan, K., Harnett, A., Janavs, J., Weiller, E., et al. (1998). The mini-international neuropsychiatric interview (M.I.N.I.): The development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *Journal of Clinical Psychology, 59*, 22-33.
- Spinhoven, P., & van der Does, W. (1999). Thought suppression, dissociation and psychopathology. *Personality and Individual Differences, 27*, 877-886.

- Teasdale, J., Segal, Z., Williams, J. M. G., Ridgeway, V., Soulsby, J., & Lau, M. (2000). Prevention of relapse/recurrence in major depression by mindfulness-based cognitive therapy. *Journal of Consulting and Clinical Psychology, 68*, 615–623.
- Wegner, D., & Zanakos, S. (1994). Chronic thought suppression. *Journal of Personality, 62*, 615–640.
- Wenzlaff, R. M., & Luxton, D. D. (2003). The role of thought suppression in depressive rumination. *Cognitive Therapy and Research, 27*, 293–308.
- Wenzlaff, R., & Wegner, D. (2000). Thought suppression. *Annual Review of Psychology, 51*, 59–91.
- Williams, J. M. G., Alatiq, Y., Crane, C., Barnhofer, T., Fennell, M., Duggan, D., Hepburn, S., & Goodwin, G. (2008). Mindfulness-based cognitive therapy (MBCT) in bipolar disorder. *Journal of Affective Disorders, 107*, 175–179.
- Williams, J. M. G., Duggan, D., Crane, C., & Fennell, M. (2006). Mindfulness-based cognitive therapy for prevention of recurrence of suicidal behaviour. *Journal of Clinical Psychology, 62*, 201–210.

Received 27 December 2007; revised version received 25 September 2008