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The effects of amount of home meditation practice in Mindfulness Based Cognitive Therapy on hazard of relapse to depression in the Staying Well after Depression Trial

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ABSTRACT

Few empirical studies have explored the associations between formal and informal mindfulness home practice and outcome in Mindfulness-based Cognitive Therapy (MBCT). In this study ninety-nine participants randomised to MBCT in a multi-centre randomised controlled trial completed self-reported ratings of home practice over 7 treatment weeks. Recurrence of Major Depression was assessed immediately after treatment, and at 3, 6, 9, and 12-months post-treatment. Results identified a significant association between mean daily duration of formal home practice and outcome and additionally indicated that participants who reported that they engaged in formal home practice on at least 3 days a week during the treatment phase were almost half as likely to relapse as those who reported fewer days of formal practice. These associations were independent of the potentially confounding variable of participant-rated treatment plausibility. The current study identified no significant association between informal home practice and outcome, although this may relate to the inherent difficulties in quantifying informal home mindfulness practice. These findings have important implications for clinicians discussing mindfulness-based interventions with their participants, in particular in relation to MBCT, where the amount of participant engagement in home practice appears to have a significant positive impact on outcome.

Introduction

Mindfulness Based Cognitive Therapy (MBCT), like other mindfulness-based interventions (MBIs), includes home practice of mindfulness meditations as a core component of the approach. Such practice is regarded as one of the primary vehicles for becoming aware of, and relating differently to, mental habits and thus learning relapse prevention skills (Segal, Williams, & Teasdale, 2013). Thus it would be expected that a significant relationship should exist between amount of home practice completed by people being treated with MBCT and its prophylactic effects on relapse in depression. Despite this, relatively few studies have systematically examined the association between the amount of home practice and outcome in MBCT or other related MBIs. For example, in a recent review of more than 90 empirical studies of MBIs, Vettese, Toneatto, Stea, Nguyen, and Wang (2009) found that only 24 had examined the association between the amount of home practice and subsequent outcome, and only 13 had found at least partial evidence of a positive association. Differences across studies were substantial, and included variability in the nature of the participant group under investigation (clinical/non-clinical), the MBI being studied, how mindfulness practice was assessed (for example by daily diary or retrospective self-report), and how level of practice was then quantified (e.g. frequency versus duration of practice). Most importantly, there are very few studies of the effects of practice on outcome in MBCT, in particular in relation to risk of relapse to depression, the main outcome of interest in existing randomised controlled trials (Piet & Hougaard, 2011). Thus there

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is little scientific evidence to support the hypothesis that home practice is a key vehicle for change in MBCT or to guide clinicians when they are discussing home practice of mindfulness meditation with their participants.

A second issue concerns the fact that relatively little attention has been directed to the fact that even where an association between mindfulness practice and positive outcome is observed, the amount of practice a person chooses to engage in may be confounded with other factors. One obvious confounding variable is a participant's level of belief in, or preference for, their treatment: i.e. how logical it seems, how credible, and how much they feel it is likely to work in their particular case. Since the early days of evidence-based psychological treatment it has been repeatedly shown that a participant's belief in or preference for their treatment can have a significant predictive impact on subsequent outcome. For example, Iacoviello et al. (2007) found in a treatment trial for major depression that treatment preferences for psychotherapy versus pharmacotherapy affected subsequent therapeutic alliance, a known predictor of outcome in psychotherapy (e.g. Flückiger, Del Re, Wampold, Symonds, & Horvath, 2012). Likewise Kwan, Dimidjian, and Rizvi (2010) found in a trial of pharmacotherapy versus psychotherapy for depression that a mismatch between patient preference and allocated treatment was associated with increased attrition, reduced session attendance and poorer therapeutic alliance early in treatment, leading to indirect effects on patient outcome. In a final example from an early trial of Cognitive Therapy (CT), Fennell and Teasdale (1987) reported a correlation of $r = -.76$ between a Session 2 rating of plausibility of the treatment rationale of CT for depression and the final outcome, Montgomery-Asberg Depression Rating Scale depression score post-treatment. Associations between treatment preference or plausibility and subsequent outcome are not always straightforward (e.g. Steidtmann, Manber, Arnow, & Kocsis, 2012). However it has been suggested that treatment gains can be accounted for to a significant degree by early reductions in hopelessness that arise from the presentation of a plausible treatment rationale in the first sessions of treatment and the opportunity for the participant to explore the rationale as part of homework (e.g. Ilardi & Craighead, 1994). This has important implications. Like homework assignments in CT, meditation practice in MBCT is time consuming and challenging (often requiring individuals to expose themselves to previously avoided subjective experience, Segal et al., 2013). It is possible that strong preferences for a treatment and/or high perceptions of treatment plausibility may provide the motivation to adhere to home meditation practice, thus producing an association between treatment plausibility and engagement in home practice. Indeed, it may be that increased plausibility *itself* predicts outcome, and does so independently of home practice, through other mechanisms, such as those described above. It is therefore important to rule out the possibility that any relationship observed between amount of home practice and outcome is confounded with treatment plausibility.

Mindfulness practice can be quantified in a number of different ways, for example in terms of frequency and/or duration of longer formal meditation practices (for example, in MBCT, following a guided meditation CD, focussing on sensations in the body, sounds, thoughts and emotions), shorter formal practices (for example in MBCT, the 3-min breathing space), informal meditation practices (for example, in MBCT the cultivation of mindfulness in routine daily life activities), or both. There is no consensus in the broader meditation literature concerning whether frequency of practice or duration of practice is the most important variable for producing change or indeed whether formal or informal mindfulness practice is more important in this regard. Further, it is unclear whether a linear relationship would be expected to exist between amount of practice and observed benefits, or whether in fact once a threshold, or adequate minimum 'dose' of practice is reached, this is sufficient to produce change, at least in the context of relatively short and intensive MBIs. To examine these issues one recent study looked at the relationship between practice and outcome in participants receiving MBCT for bipolar disorder, considering both the cumulative number of sessions of formal meditation practice participants completed across treatment, and the comparison between those practicing formally for three or more days per week and those practicing less often (Perich, Manicavasagar, Mitchell, & Ball, 2013). Results showed there was a significant correlation between total number of days on which a formal meditation practice was undertaken and clinician rated depression at 12-month follow-up. Additionally, those who reported meditating on average three or more days per week had lower levels of depression and anxiety at 12-month follow-up than those reporting fewer days of formal practice. Likewise Hawley et al. (2014) analysed data from 32 participants attending either MBCT or Mindfulness Based Stress Reduction (MBSR) groups and identified an indirect association between amount of formal (but not informal) meditation practice and outcome (change in depressive symptoms on the Hamilton Rating Scale for Depression) which was partially mediated by reductions in rumination.

The primary purpose of the current study was to examine the association between home practice and outcome in 99 participants receiving MBCT as part of the Staying Well after Depression Trial (Williams et al., 2010, 2013). Following Perich et al., (2013) we examined (a) the relationship between the amount of formal home meditation practice completed over seven programme weeks, treated as a continuous variable, and hazard of relapse to major depression over follow-up; (b) the relative hazard of relapse for those engaging in a formal home practice on an average of three or more days per week (i.e. at least every other day/50% of recommended days) as compared to those engaging in formal home practice less often; and (c) the relationship between hazard of relapse to major depression and the total number of informal mindfulness practices completed over the treatment weeks. In each case we considered evidence for potential confounding of the relationship between home practice and outcome by treatment plausibility. It was hypothesised that:

a) There would be a significant association between average daily duration of formal home practice and hazard of relapse to depression.
b) Individuals who engaged in formal practice on at least 3 days per week would have a significantly lower hazard of relapse to depression than those who practiced less often,
c) That there would be a significant association between increased amount of informal home practice and reduced hazard of relapse to major depression
d) That increased ratings of treatment plausibility would be associated with greater formal and informal home practice, but
e) That the associations between formal and informal home practice would remain after adjusting for any significant confounding effect of treatment plausibility.

Method

Participants

All participants in the trial had a history of at least three episodes of major depression and most (80%) had a history of suicidal ideation or suicidal behaviour. All were in remission on entry to the