

## EDITORIAL

# Mindfulness-Based Cognitive Therapy and the Prevention of Depressive Relapse Measures, Mechanisms, and Mediators

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**Mindfulness-based approaches** to clinical interventions are receiving increasing attention in psychiatric research.<sup>1</sup> The article in this issue of *JAMA Psychiatry* by Kuyken et al<sup>2</sup> is an important meta-analysis of mindfulness-based cognitive therapy

(MBCT) in the prevention of depression relapse. This meta-analysis was conducted at the individual patient level and included 9 randomized clinical trials, with data available for 1258 patients who participated in studies in which MBCT was compared with at least 1 non-MBCT treatment. The findings indicate that MBCT produced a reduced risk of depressive relapse within a 60-week follow-up period compared with other active treatments. Mindfulness-based cognitive therapy was most effective for patients with greater depressive severity before treatment.

Scientific research on mindfulness and other related practices derived from contemplative traditions is enjoying a surge in interest.<sup>1,3</sup> The effect of mindfulness-based interventions on basic biobehavioral processes, such as attention and emotion regulation,<sup>3</sup> is being actively addressed in basic research, and the findings from this corpus of work suggest some promise that mindfulness-based practices may modulate both attention and emotion. These processes are key targets in depressive relapse because both biased attention and impairments in emotion regulation are 2 core psychological processes that are implicated in vulnerability to depressive relapse.<sup>4</sup>

Mindfulness practices were not originally developed as therapeutic treatments.<sup>5</sup> They emerged originally in contemplative traditions for the purposes of cultivating well-being and virtue. The questions of whether and how they might be helpful in alleviating symptoms of depression and other related psychopathologies are quite new, and the evidence base is in its embryonic stage. To my knowledge, the article by Kuyken et al<sup>2</sup> is the most comprehensive meta-analysis to date to provide evidence for the effectiveness of MBCT in the prevention of depressive relapse. However, the article also raises many questions, and the limited nature of the extant evidence underscores the critical need for additional research. The remainder of this commentary will highlight the key questions and issues that represent immediate research needs.

## Which Patients Respond Best to MBCT?

While the review by Kuyken et al<sup>2</sup> clearly shows that patients with greater depressive severity prior to treatment benefit most

from treatment, the particular psychological or biological characteristics of patients who show the best treatment response are not known. Perhaps it is patients with a particular variant of affective style; perhaps it is patients with pronounced self-focused rumination. There may also be specific neural correlates that predict responses to treatment and that perhaps also change in response to treatment. These questions are all empirically tractable and should be pursued in future studies with large sample sizes.

## What Are the Mechanisms of Action of MBCT?

While we know from basic research on mindfulness-based approaches that they may alter brain function in circuits that underlie attention, emotion, and self-relevant processing, whether and how such underlying mechanisms may be altered by MBCT has not been studied in clinical populations. The basic research literature can be used as a guide for identifying which mechanisms are likely promising in mediating treatment effects, but to my knowledge, requisite studies that relate changes in basic mechanisms to clinical outcomes have not yet been performed.

## What Precisely Is the Added Value of Mindfulness Compared With Cognitive Therapy?

The addition of mindfulness to the ingredients of cognitive therapy is a potentially important one, yet the precise consequences of this addition have remained elusive. Future research is required to more explicitly delineate the added value of the mindfulness component in terms of the psychological processes that are affected. It will be important for future research to target positive affect as an outcome; severity of depressive symptoms is the focus of the article under consideration and most other clinical trials evaluating the effect of MBCT on depression, but positive affect is another consequential outcome.

## How Can Skill Acquired in Mindfulness Be Measured as a Potential Mediator of the Effect of MBCT?

If mindfulness is a key process that is trained by MBCT, then the efficacy of MBCT should at least in part be mediated by changes in mindfulness. Unfortunately, there are very significant limitations of self-report measures of mindfulness.<sup>6</sup> Recently, our group developed a simple breath-counting procedure<sup>7</sup> that we believe can be an effective behavioral measure of mindfulness and might usefully be inserted in clinical

trials evaluating the efficacy of mindfulness-based interventions. This would provide an independent, objective measure of mindfulness that can be used to examine the effects of MBCT and other similar interventions as mediators on clinical outcomes.

A related issue is the dosage of practice. Many studies of mindfulness interventions have reported that the magnitude of change in various outcomes is associated with the amount of daily practice performed by the participants. While this type of association is not always present, it is a potentially very important variable and may account for considerable variability across patients and across studies. Simple practice logs completed on a daily basis can provide useful information with which to correlate changes in clinical and other outcomes.

### Might Combination Therapies of MBCT Along With Other Treatments Provide Additional Benefit Compared With MBCT?

There is an opportunity in the future to examine the synergistic effect of MBCT along with other treatments for preventing depressive relapse and for treating depression. One promising strategy is physical exercise. In light of other evidence supporting a role for physical exercise in enhancing neuroplasticity,<sup>8</sup> it might be of great interest to combine physi-

cal exercise with other types of intervention (not necessarily simultaneously but in close temporal proximity) to examine the effect of a neuroplasticity enhancer (eg, physical exercise) with a psychological form of treatment, such as MBCT, to determine whether physical exercise helps to consolidate the learning that may occur in the context of the psychological treatment. This question can be asked of any type of therapy that might be combined with physical exercise.

### Conclusions

The meta-analysis by Kuyken et al<sup>2</sup> provides strong evidence that MBCT is effective in reducing risk of depressive relapse and is particularly effective for patients with higher levels of depressive severity before treatment. The opportunity now is to examine in more detail which types of patients benefit most from MBCT, the mechanisms by which MBCT is producing its beneficial change, and how we can better measure the mediators of therapeutic change. Combining insights and methods from basic cognitive and affective neuroscientific research on mindfulness with future clinical trials provides a framework for addressing these additional questions. In the meantime, the work of Kuyken et al<sup>2</sup> clearly provides important new evidence to support the clinical utility of MBCT in minimizing depressive relapse.

#### ARTICLE INFORMATION

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