Issue content:

38 new studies provided in this issue, including:

16 Intervention and Application studies
9 Review and Meta-analysis studies
6 Etiology and Associations studies
7 Theory and Processes studies
0 Method and Measures studies

Intervention and Application

The Intervention and Application section of Mindfulness Research Monthly (MRM) references studies that focus on the use of mindfulness-based treatments and the feasibility of their application across diverse populations. Key articles identified in this area include:


15. Segal, Z. V., Bieling, P., Young, T., MacQueen, G., et al. (2010). Antidepressant monotherapy vs sequential pharmacotherapy and mindfulness-based cognitive therapy, or placebo, for relapse prophylaxis in recurrent depression. *Archives of General Psychiatry, 67*(12), 1256-64. [link]


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**Review and Meta-analysis**

The *Review and Meta-analysis* section of MRM references publications that combine and synthesize studies, either statistically or theoretically, in an attempt to further knowledge in mindfulness and related areas. Key articles identified in this area include:


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**Etiology and Associations**

*Etiology and Associations* references those studies that explore mindfulness as an empirical construct and examine its causes, outcomes and correlates in relation to biopsychosocial constructs. Key articles identified in this area include:


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**Theory and Processes**

*Theory and Processes* references studies examining the principles and mechanisms underlying how mindfulness is developed and how it functions in relation to human health, behavior, cognition, and emotion. Key articles identified in this area include:


**Method and Measures**

*Method and Measures* references studies developing psychometric and implementation tools to measure and implement mindfulness, and those focusing on study design and methodology in mindfulness research. Key articles identified in this area include:

1. Studies are needed in this area

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Mindfulness Research Monthly provides monthly research updates in order to inform researchers and practitioners interested in the field of mindfulness, and is hosted by the:

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**Method & Measures**

*Method & Measures* cites studies that develop psychometric and implementation tools to assess mindfulness and related interventions, and studies focusing on methodology in mindfulness research. Key articles identified in this area include:


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**NIH Research Trials**

Newly funded (Jan-Feb 2011) National Institutes of Health (NIH) grants include:

1. University of Wisconsin, Madison. Study two on the effectiveness of mindfulness training for smokers (MTS2). NIDA, Trial # NCT01299909. [link]

2. Universität Duisburg-Essen. Mindfulness-based Stress Reduction in Cancer Treatment (SASO). Trial # NCT01303822. [link]

3. University of Utah. The HEALS Project - Health Education and Active Living for Surviving Seniors. NCI, Trial # NCT01305044. [link]

4. Pacific University. Transcultural Mindfulness Assessment: A Mixed Methods Analysis. NCCAM, Trial # NCT01299064. [link]

5. University of Washington. Mindful Awareness in Body-Oriented Therapy for Women's Substance Abuse Treatment. NIDA, Trial # NCT01280916. [link]

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**NIH Research Trial**

Newly funded (March 2011) National Institutes of Health grants include:

1. Massachusetts General Hospital. Could Meditation Modulate the Neurobiology of Learning Not to Fear? Trial # NCT01320969. [link]

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**Method & Measures**

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Review & Meta-analysis

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1. Albrecht, N. J. (2011). Does meditation play an integral role in achieving high-level wellness as defined by Travis and Ryan (2004)? *Journal of Complementary and Integrative Medicine*, 8(1), Article 15. [link]


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**Method & Measures**

*Method & Measures* cites studies that develop psychometric and implementation tools to assess mindfulness and related interventions, and studies focusing on methodology in mindfulness research. Key articles identified in this area include:


**NIH Research Trials**

Newly funded (month of April 2011) National Institutes of Health (NIH) grants related to mindfulness include:

1. Duke University, J. Greenson, PI. Stress reduction training to improve sleep quality, stress physiology & cardiovascular disease (CVD) risk markers. Trial # NCT01343810. [link]

2. University of Calgary, T. Campbell, PI. A Comparison of MBSR and CBT for the Treatment of Insomnia in Cancer (I-CAN SLEEP). Trial # NCT01335776. [link]

3. Talaria, Inc, K. Carpenter, PI. Online Cognitive Behavioral Therapy (CBT) workbook (WW). Trial # NCT01337843. [link]

**David S. Black, M.P.H., Ph.D.**  
*Editor, Mindfulness Research Monthly*

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Review & Meta-analysis continued...


Method & Measures

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**NIH Research Trials**

Newly funded (month of May 2011) National Institutes of Health (NIH) grants related to mindfulness include:

1. Massachusetts General Hospital, G.N. Pachas, PI. Effect of behavioral training on physiological responses to smoking cues, affect and cortisol. Trial # NCT01362101. [link]
**Intervention & Application**

*3 New NIH Research Trials*

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**Etiology & Associations**

Etiology & Associations cites articles that explore mindfulness as an empirical construct and examine its causes, outcomes and correlates in relation to biopsychosocial and other constructs:


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**Review & Meta-analysis**

Review & Meta-analysis cites articles that combine and synthesize mindfulness research and/or theory either statistically or substantively:


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**Theory & Processes**

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Method & Measures

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NIH Research Trials

Newly funded (month of June 2011)
National Institutes of Health (NIH) grants related to mindfulness include:

1. George Mason University, J.P. Tangney, PI. Evaluation of re-entry values and mindfulness program (REVAMP) with jail inmates. Trial # NCT01378923. [link]

2. Oregon Health and Science University, B. Oken, PI. Mindfulness meditation in chronic stress. Trial # NCT01386060. [link]


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**Theory & Processes**

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**NIH Research Trials**

Newly funded (July 2011) National Institutes of Health (NIH) grants related to mindfulness include:

1. University of Pittsburgh, N. Morone, PI. Aging Successfully With Pain. Trial # NCT01405716. [link]

**Intervention & Application**

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Method & Measures

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NIH Research Trials

Newly funded (month of August 2011) National Institutes of Health (NIH) grants related to mindfulness include:

Cardiff and Vale University Health Board, J. Berrill, PI. A trial of multi-convergent therapy for functional abdominal symptoms and psychological stress in inflammatory bowel disease. Trial # NCT01426568. [link]

Musial et al. (Res in Compl Med) compiled a comprehensive summary from investigations of mindfulness-based stress reduction (MBSR) in cancer care. Although they found evidence that MBSR can improve mood and quality of life, the authors urged investigators to continue conducting well controlled, longer, and more detailed inquiries in the field.

Jones et al. (Family J) extended previous studies of trait mindfulness and marital satisfaction to consider a potential underlying factor: spousal attachment. The authors described this property as the level of security experienced as a result of feeling close to and dependent on one’s partner. The finding may have implications for couples’ therapists or others using mindfulness to strengthen the marital bond.

The demonstrated benefits of mindfulness could arise from improvements in non-affective cognitive control operations like attention and working memory. van Vugt and Jha (Cogn Affect Behav Affect Neuro) used a mathematical-modeling approach to sort out what factors underlie the effects of mindfulness training (MT) on performance of a working-memory task. After an intensive month-long MT retreat, participants showed significant improvements in reaction time compared to control subjects who did not undergo MT. MT apparently improved information quality without affecting non-decisional factors.

The Mindful Attention Awareness Scale (MAAS) is perhaps the most widely used measure of mindfulness as a trait, but it has been primarily applied to a homogenous population of Caucasian adults. Black et al. (Assessment) used stringent psychometric assessment methods to evaluate MAAS delivered to Chinese high-school adolescents. Both the 15-item scale and a brief 6-item version of MAAS appeared to hold up as a measure of mindfulness in this culturally distinct population.

Highlights

Stephani Sutherland, PhD

Every month, the editor will select studies from MRM to be highlighted by our science writer, Stephani Sutherland. Highlights will summarize these studies’ findings, providing a snapshot of the latest work in the field.

Ljotsson et al. (Am J Gastroenterol) have held up their internet-delivered cognitive behavioral treatment (ICBT)—which includes mindfulness training—for irritable bowel syndrome (IBS) against a similar stress-reduction treatment. The authors aimed to show that ICBT confers specific benefits beyond simply the expectation of improvement from a credible treatment. They suggest that ICBT’s exposure exercises, specially tailored for IBS, might explain its effectiveness.

Meditation practices’ effects on the body-mind have neuronal, biochemical, and even genetic roots. For example, meditative stress reduction results in lower plasma levels of the neurotransmitters epinephrine (E) and norepinephrine (NE). Catechol O-methyl transferase (COMT) enzymatically halts the transmitters’ messages; its activity affects neuronal signaling in multiple brain areas. Similarly, meditation may increase neuroplasticity, which relies on growth factors like brain-derived neurotrophic factor (BDNF). Jung et al. (Stress) found that some meditation outcomes vary with polymorphisms in the genes for BDNF and COMT, suggesting that people might respond differently to meditative practices depending on subtle genetic differences in these proteins.

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Etiology & Associations continued...


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Theory & Processes continued…


Method & Measures

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Clinical Trials

*Clinical Trials* cites studies related to mindfulness that have been newly registered or recently updated (Sept 2011) at ClinicalTrials.gov.


Massachusetts General Hospital (Fava, M. & Nyer, M., PI). Adaptation of dialectical behavior therapy skills-groups for individuals with suicidal ideation and depression. Trial# NCT01441258. [link]

University of South Carolina & Department of Defense (Herbert, J., PI). Eating, activity, and stress education (EASE). Trial# NCT01434004. [link]

University of Utah (Nakamura, Y., PI). Behavioral Treatment for Substance Abuse. Trial# NCT01438346. [link]
\[\text{Highlights} \quad \text{Stephani Sutherland, PhD}\]

Every month, the editor will select studies from MRM to be highlighted by our science writer, Stephani Sutherland. *Highlights* will summarize these studies’ findings, providing a snapshot of some of the latest work in the field.

**Vollestad et al. (Br J Clin Psychol)** reviewed 19 studies that used mindfulness- and acceptance-based interventions (MABI) for the treatment of anxiety disorders. Meta-analysis revealed robust benefits for anxiety-related symptoms with MABI interventions. Most studies used interventions based purely on a mindfulness approach, such as mindfulness-based stress reduction (MBSR) and mindfulness-based cognitive therapy (MBCT), but others included additional components. The analysis hinted that these multi-component treatments—and individual vs. group therapy—might provide additional benefits, but the effects were not significant. While many studies were uncontrolled, the review authors point out that the available work provides a solid foundation for further exploration of mindfulness treatments specifically for anxiety.

**Berkovich-Ohana et al. (Clin Neurophysiol)** pursued the neurophysiological underpinnings of the benefits of mindfulness meditation (MM). They made electroencephalographic (EEG) measurements of regional brain activity called the Default Mode Network (DMN), thought to represent self-referential processing. The DMN involves structures at the front of the brain including the prefrontal cortex and the cingulated cortex. One of the authors’ aims was to determine whether changes in DMN activity could be detected in the gamma band of EEG activity. They determined that it could, and that meditators indeed showed lower frontal gamma activity, indicative of reduced DMN activity and perhaps reflecting a reduced self-referential narrative. Interestingly, the level of MM expertise did not affect this result, suggesting that neuroplasticity in brain networks may occur early in MM training.

Major depressive disorder (MDD) has a dynamic nature, with depressive episodes that often remit and then recur. Multiple studies have now confirmed that mindfulness-based cognitive therapy (MBCT) can help prevent relapse in people in remission from MDD. But how does this therapy adjust the brain to keep it on track? **Keune et al. (Biol Psychol)** have addressed this question using electroencephalography (EEG) to track patterns of the brain’s alpha-wave activity. Right-hemisphere anterior cortical activation is thought to represent a more withdrawal-oriented disposition, while left-side activity is thought to indicate an approach-oriented stance. Asymmetry with enhanced right-side activity has been associated with MDD, and it appears to worsen over time, perhaps indicating vulnerability to a new episode. In the current study, the authors asked whether MBCT might stabilize this pattern in remitted MDD patients, perhaps explaining MBCT’s protective effects. Eight weeks of MBCT decreased trait rumination and residual depressive symptoms, and increased trait mindfulness, as expected. Alpha-wave asymmetry patterns, however, appeared similar between those who received MBCT and wait-listed control subjects. Further, asymmetry did not correlate with mindfulness or rumination. While alpha-wave asymmetry may yet provide insights to MDD, the protective effects of MBCT appear not to arise from its stabilization.

Women with breast cancer benefitted from an eight-week course of mindfulness-based stress reduction (MBSR) compared to control treatments of a nutrition education program (NEP) or usual care (UC), **Henderson et al. (Breast Cancer Res Treat)** report. In addition to quality of life, the study looked at reports of meaningfulness, anxiety, and emotional control. The benefits declined over the two-year follow-up period, but, importantly, women experienced similar effects regardless of their initial expectations for treatment.

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*Editor, Mindfulness Research Monthly*  
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**Intervention & Application**

*Intervention & Application* cites articles that focus on the use of mindfulness-based treatments and the feasibility of their application across diverse populations.


Britton, W. B., Shahar, B., Szepsenwol, O., & Jacobs, W. J. (2011). *Mindfulness-Based cognitive therapy improves emotional reactivity to social stress: Results from a randomized controlled trial.* *Behavior Therapy.* [link]


Intervention & Application continued...


Etiology & Associations

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Review & Meta-analysis continued...


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Clinical Trials

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Region Skane (Sundquist, J., PI). Mindfulness as a method of improving mental health, cognitive results and decreasing stress in high school students. Trial# NCT01457222. [link]

University of Mexico (Burge, M., PI). Efficacy Study of Mindfulness-Based Exercise for Posttraumatic Stress Disorder (PTSD). Trial# NCT01462045. [link]
Every month, the editor will select studies from MRM to be highlighted by our science writer, Stephani Sutherland. Highlights will summarize these studies’ findings, providing a snapshot of some of the latest work in the field.

Diamond and Lee (Science) present a review of studies that examine activities aimed at improving children’s executive function (EF). EF contributes to qualities the authors identified as central to success: creativity, flexibility, self-control, and discipline. Indeed, EF proficiency predicts later academic achievement, so improving EF in young children seems a viable strategy for success in school. The interventions aimed at EF enhancement ranged from computer and live games to aerobic exercise, martial arts, and mindfulness practices. Mindfulness practices in children have borne fruit in improving EF. In one study, children aged 7 to 9 were trained in a three-part practice: a sitting meditation, increasing sensory awareness, and a body scan. Like many interventions aimed at EF, the greatest improvements induced by mindfulness practice were seen in children who started off with the worst EFs. Another study examined yoga training that included a mindfulness component of relaxation with sensory awareness. Pre-teen girls performed better on EFs—particularly on the most demanding EF tasks—after the yoga training. The review also considers several school curricula programs that address EF such as the Montessori method of education, which incorporates mindfulness practice into activities like walking meditation.

As practitioners increasingly use mindfulness-based behavioral treatments, Sobzak and West (Cog Behav Practice) remind us to consider diverse populations and the challenges that might arise. Working mainly in the northeastern and southern U.S., they recount their own experiences with underserved and marginalized people to make some clinical recommendations. Some specific challenges for these patients include facing challenges and pursuing values in the midst of adversity, and accepting mindfulness itself as a treatment.

Despite an explosion of literature on mindfulness practices, few reports have attempted to tell us how mindfulness works to change the human experience. Now Hölzel et al. (Perspectives Psych Sci) have constructed a neuroscientific, theoretical framework for mindfulness based on an extensive survey of the literature. The authors characterized the observed effects of mindfulness into five main categories: attention regulation, body awareness, two separate elements of emotion regulation, and shifted perspective of self. Aside from self-reports and behavioral assessment tools, evidence for underlying neural correlates of these effects comes in the form of neuroimaging. Physical brain changes seen with magnetic resonance imaging (MRI) are usually reported as brain volume. Changes might occur in an individual over time—say before and after practice—or researchers might compare groups of subjects, perhaps meditators to non-meditators. Interpretation of this type of data rests on the idea that structural change reflects neuroplasticity following experience-driven activity. The term simply refers to neurons’ ability to make—and unmake—synaptic connections, the tiny gaps across which neurons communicate with one another. Functional MRI can be used to “see” neurons’ activity by measuring metabolic oxygen demand. As neural communication activity increases, so does regional demand. For each of their five identified mindfulness components, Hölzel and colleagues found consensus in the literature about the brain regions and processes thought to underlie them. They present a rather tidy summation of their findings in the aptly named Table 2: Components Proposed to Describe the Mechanisms Through Which Mindfulness Works.
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**Donald Altman, M.A., LPC**, is a psychotherapist, former Buddhist monk, and Vice-President of The Center for Mindful Eating. An award-winning writer, he is author of *The Mindfulness Code*, *Meal By Meal*, *Living Kindness*, and *Art of the Inner Meal*. He is an adjunct professor at Lewis and Clark Graduate School of Counseling and at Portland State University’s Interpersonal Neurobiology program.

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**Intervention & Application**

*Intervention & Application* cites articles that focus on the use of mindfulness-based treatments and the feasibility of their application across diverse populations.


De Raedt, R., Baert, S., Demeyer, I., Goeleven, E., et al. (2011). *Changes in attentional processing of emotional information following mindfulness-based cognitive therapy in people with a history of depression: Towards an open attention for all emotional experiences.* *Cognitive Therapy and Research.* [link]


Elabd, S. (2011). *Mindful meditation for chronic pain sufferers may have positive effect.* *Topics in Pain Management,* 27(4), 9. [link]


 Intervention & Application continued...


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Clinical Trials

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Alberta Health Services (Carlson, L., PI). The eCALM study - An online mindfulness-based stress reduction program for individuals living with cancer in Alberta. Trial# NCT01476891. [link]

Duke University (Tucci, D., PI). New therapy for patients with severe tinnitus. Trial# NCT01480193. [link]

Group Health Cooperative (Cherkin, D., PI). Comparison of CAM and conventional mind-body therapies for chronic back pain. Trial# NCT01467843. [link]

Lund University (Sundquist, J., PI). Study of mindfulness-based group treatment in patients with depression and anxiety. Trial# NCT01476371. [link]

Massachusetts General Hospital (Ashih, H. & De Jong, M., PI(s)). Mindfulness-based cognitive Therapy for the treatment of unipolar depression in patients with neuropathic pain. Trial# MCT01473615. [link]

University of Utah (Baker, J., PI). Mindfulness-based stress reduction techniques and yoga for treatment of urinary urge incontinence. Trial# NCT01470560. [link]
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Stephani Sutherland, PhD

Every month, the editor will select studies from MRM to be highlighted by our science writer, Stephani Sutherland. Highlights will summarize these studies' findings, providing a snapshot of some of the latest work in the field.

Are mindfulness practices beneficial for children? Greenberg and Harris (Child Dev Persp) address this question with a review of the current state of research involving contemplative practices in children and youth. One of the challenges facing the mindfulness community is to extend and expand upon the foundation of published studies with larger, longer, and more rigorous investigations. The review finds that practices including mindfulness meditation and yoga for young people do show promise, but the literature is itself in its infancy. Contemplative practices adapted for young people should consider their physical, cognitive, and emotional abilities, and often take the form of nature- or art-based activities, guided imagery, or age-appropriate movement like yoga. Whereas studies of contemplative practice for clinical populations of kids were numerous, studies of universal, or general, populations of children were scarce and not of high quality. The authors also point out that while many studies of yoga have shown physical and mental health benefits in children, they have been largely conducted in India, where yoga has a prominent cultural position, potentially affecting outcomes. The authors advocate for more studies of yoga within the US. While most studies used adult practices adapted for kids, some child-specific practices have been developed for use in schools with some success. People's enthusiasm for contemplative practices in children currently outweighs the evidence for its benefits, the authors conclude. They make a plea for further investigation based in current child development theory and using multiple readouts of improvement.

In a pilot study, Hayes and colleagues (Mindfulness) have brought the mindfulness-related Acceptance and Commitment Therapy (ACT) to adolescents with depression. The adolescents who received ACT showed greater improvements in depressive symptoms than did kids receiving treatment as usual (TAU). Dysphoria, negative self-evaluation, and somatic symptoms were particularly improved by ACT compared to TAU. Limited follow-up data suggest that the ACT but not TAU patients continued to improve after the study treatment ended. The authors propose that ACT might be a better long-term treatment strategy for depressed adolescents than currently used practices and advocate for a larger study.

Coholic et al. (J Child Fam Stud) turned their focus to children in need. Kids facing trauma, chronic maltreatment, or neglect tend to struggle with emotional state, reactivity, and remaining grounded in the moment. In addition, they lack characteristics their healthy peers enjoy: self-esteem, optimism, and resilience. This last element might hold the key to finding positive outcomes. The authors used a Holistic Arts-Based Group Program (HAP) designed to combine arts- and mindfulness-based methods to build children's resilience by improving self-awareness, emotional regulation, attention focus, and problem-solving skills. While the study notes significant design concerns, the results at least suggest that children benefitted from the HAP program, particularly in self-reports of resilience.