



Shorter communication

Reappraisal and mindfulness: A comparison of subjective effects and cognitive costs

Shian-Ling Keng^{a,*}, Clive J. Robins^{a,b}, Moria J. Smoski^b, Jana Dagenbach^c, Mark R. Leary^a^a Department of Psychology and Neuroscience, Box 90086, Duke University, Durham, NC 27708, USA^b Department of Psychiatry and Behavioral Sciences, Box 3026, Duke University Medical Center, Durham, NC 27710, USA^c Duke Interdisciplinary Initiative in Social Psychology, Erwin Mill Building, 2024 West Main Street, Durham, NC 27705, USA

ARTICLE INFO

Article history:

Received 5 September 2012

Received in revised form

14 July 2013

Accepted 22 October 2013

Keywords:

Emotion regulation

Emotion regulation strategies

Mindfulness

Reappraisal

Depression

ABSTRACT

The present study investigated the relative effects of mindfulness and reappraisal in reducing sad mood and whether trait mindfulness and habitual reappraisal moderated the effects. The study also compared the extent to which implementation of these strategies incurred cognitive resources. A total of 129 participants were randomly assigned to receiving training in mindfulness, reappraisal, or no training prior to undergoing an autobiographical sad mood induction. Results showed that mindfulness and reappraisal were superior to no training, and equivalent in their effects in lowering sad mood. Compared to mindfulness, reappraisal resulted in significantly higher interference scores on a subsequent Stroop test, reflecting greater depletion of cognitive resources. Higher trait mindfulness, but not habitual reappraisal, predicted greater reductions in sadness across conditions. The study suggests that although mindfulness and reappraisal are equally effective in down-regulating sad mood, they incur different levels of cognitive costs.

© 2013 Elsevier Ltd. All rights reserved.

Emotion regulation (ER) has been defined as processes through which individuals “influence which emotions [they] have, when [they] have them, and how these emotions are experienced or expressed” (Gross, 1998, p. 224). Disruptions in ER have been linked to greater symptoms of psychological disorders, including major depressive disorder (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008). Much research has examined specific forms of maladaptive ER strategies that predispose individuals towards developing psychological problems, but an equally valuable research direction is to identify and compare adaptive ER strategies. Two strategies of interest are reappraisal and mindfulness.

Reappraisal involves reformulating the interpretation of an emotion-inducing situation to reduce its emotional impact (Gross, 1998). It has been conceptualized as an antecedent-focused strategy, which refers to attempts to regulate emotional tendencies at or prior to the onset of emotions. When used as an antecedent-focused strategy, reappraisal is found to be more effective than suppression of emotion expression (Gross, 1998), rumination (Grisham, Flower, Williams, & Moulds, 2009), and distraction (McRae et al., 2010) in reducing distress. Additionally, reappraisal is associated with reduced sympathetic nervous

system activation in response to mood induction (Gross, 1998; Ray, Wilhelm, & Gross, 2008). However, when used as an “on-line” regulation strategy, with instructions to regulate occurring after an emotional response has already begun, reappraisal is less effective than distraction at reducing sadness (Sheppes & Meiran, 2007) and results in greater sympathetic nervous system activation (Sheppes, Catran, & Meiran, 2009). Initiating reappraisal late as opposed to early (antecedent-focused reappraisal) in an emotional situation may pose greater self-control challenges as it requires individuals to override strong, well-established negative interpretations of the situation. In the context of clinical depression, online reappraisal may prove even more challenging given that depression is associated with negative interpretation bias (Miller & Norman, 1986).

Mindfulness has been defined as the awareness that arises through “paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally” (Kabat-Zinn, 1994, p. 4). Bishop et al. (2004) proposed that mindfulness encompasses two components: self-regulation of attention, and adoption of an attitude of curiosity, nonjudgment, and acceptance toward one’s experiences. These aspects of mindfulness have been regarded as potentially effective antidotes against psychological distress, which often involves maladaptive tendencies to avoid, suppress, or over-engage with distressing thoughts and emotions (Hayes & Feldman, 2004).

* Corresponding author. Tel.: +1 416 832 4527; fax: +1 416 595 6399.
E-mail address: slk18@duke.edu (S.-L. Keng).

Mindfulness has been shown to be an effective emotion regulation strategy. Instructions to practice mindfulness of thoughts and feelings following negative mood induction have been found to be more effective than rumination, suppression, or no instruction in alleviating subjective distress in healthy university students (Broderick, 2005), previously depressed individuals (Singer & Dobson, 2007), and currently depressed individuals (Huffziger & Kuehner, 2009). Brief mindfulness training has also been shown to be more effective than worry or control inductions (Arch & Craske, 2006; Erisman & Roemer, 2010) in down-regulating negative affect. In individuals with mood or anxiety disorders, instructions to accept emotions as they are resulted in lower negative affect and decreased heart rate in response to an emotional film clip compared to suppression (Campbell-Sills, Barlow, Brown, & Hofmann, 2006).

A small number of studies have directly compared the effectiveness of reappraisal and mindfulness. Studies have demonstrated a benefit for both mindfulness and reappraisal in down-regulating subjective and physiological indicators of negative affect in nonclinical samples (Hofmann, Heering, Sawyer, & Asnaani, 2009; Wolgast, Lundh, & Viborg, 2011) with some studies finding a benefit for reappraisal over mindfulness (Hofmann et al., 2009; Szasz, Szentagotai, & Hofmann, 2011). However, no studies have directly compared their effectiveness among depressed individuals – a population with whom interventions that utilize these regulation strategies as key techniques are commonly applied.

In addition to understanding the emotional consequences of employing reappraisal or mindfulness as regulation strategies, it is important to understand their cognitive benefits and costs. Strategies that involve more extensive cognitive processing may facilitate greater habituation to a stimulus, which may decrease long-term emotional reactivity to that stimulus (Thiruchselvam, Blechert, Sheppes, Rydstrom, & Gross, 2011). However, a strategy that depletes cognitive resources may be more difficult to maintain or may leave an individual with fewer resources to manage interpersonal or planning aspects of emotional situation post-regulation. Suppression, for example, is found to result in greater impairment in memory compared to reappraisal (Richards & Gross, 2000). Optimal cognitive performance and self-regulation are crucial considering that emotions often arise when important goals are at stake (Richards & Gross, 2000). Reappraisal, when implemented as an antecedent-focused strategy, is found to result in better memory for emotional events (Richards, Butler, & Gross, 2003; Richards & Gross, 2000) and improved social responsiveness (Butler et al., 2003). Reappraisal is also associated with reduced neurophysiological reactivity to previously reappraised stimuli, though only in non-depressed participants (Thiruchselvam et al., 2011). Reappraisal may also be associated with higher cognitive costs compared to other strategies, especially when implemented as an online strategy. Relative to distraction, online reappraisal results in greater impairment on performance on a subsequent Stroop task (Sheppes & Meiran, 2008), a measure of executive functioning. Reappraisal is also associated with increased pupil diameter and cardiac acceleration, physiological indices that reflect greater cognitive load (Urry, van Reekum, Johnstone, & Davidson, 2009). These findings suggest that reappraisal may have cognitive advantages as well as costs compared to other strategies.

Little is known regarding the extent to which mindfulness, when used as an ER strategy, consumes cognitive resources, but research on cognitive effects of brief mindfulness training may be relevant. Mindfulness training has been found to lead to improvements in orienting (the ability to direct attention towards a set of sensory inputs) and alerting (the ability to remain vigilant towards

a range of potential sensory inputs) (Jha, Krompinger, & Baime, 2007), and in conflict monitoring (the ability to prioritize attention among competing cognitive demands; Tang et al., 2007; Wenk-Sormaz, 2005). Mindfulness training was also shown to buffer against decreases in working memory capacity during high stress periods (Jha, Stanley, Kiyonaga, Wong, & Gelfand, 2010). These findings suggest that mindfulness training may enhance or buffer against decreases in cognitive and attentional resources. No studies have yet examined the extent to which engaging in mindfulness as an ER strategy affects cognitive resources.

Thus far, it may seem as though mindfulness and reappraisal have been set up as a dichotomy. In reality, these two forms of ER strategies are not mutually exclusive. Garland, Gaylord, and Park (2009) proposed that the regulation of attention aspect of mindfulness is an intrinsic process involved in reappraisal, as generating a new appraisal requires that one first disengages from the previous appraisal given to an event. Higher levels of trait mindfulness therefore may facilitate use of not only mindfulness as an ER strategy but also reappraisal. Habitual tendency to reappraise (habitual reappraisal) may also predict more effective ER. Greater habitual reappraisal has been associated with increased positive emotion, lower negative emotion, and better interpersonal functioning (Gross & John, 2003).

To date, no research has directly compared the effects of mindfulness and reappraisal on the experience of sadness among individuals with elevated depressive symptoms. This was the primary aim of the current study. Similarly, no studies have directly compared the cognitive costs of these strategies. It is plausible that mindfulness, which involves observing one's emotional and cognitive reactions nonjudgmentally, requires less executive resources than reappraisal, which involves actively attempting to change those reactions. We hypothesized that, compared to mindfulness, reappraisal would result in greater depletion of executive resources. Finally, the present study aimed to examine whether individual differences in trait mindfulness or habitual reappraisal predict greater effectiveness in down-regulating sad mood. We hypothesized that greater trait mindfulness would predict greater decreases in sadness in both mindfulness and reappraisal conditions.

Methods

Participants

A total of 129 participants were recruited and randomly assigned to receiving training in mindfulness ($n = 43$), reappraisal ($n = 43$), or to a no-instruction condition ($n = 43$). Potential participants were directed to an online survey and invited for participation if they fulfilled study criteria. Inclusion criteria were age between 18 and 55 years old and Beck Depression Inventory (BDI; Beck, Rush, Shaw, & Emery, 1979) scores of 10–29. Due to ethical concerns, participants were excluded and offered psychological services resources if they scored above 29 on the BDI or endorsed suicidal ideation, defined by a score of 3 on the suicidality item of the BDI. Participants were recruited from the Undergraduate Research Subject Pool and from the community, and received credits toward a course research requirement or twenty dollars, respectively, for their participation. This study was approved by Duke University's Institutional Review Board.

Procedure

Following completion of questionnaire measures and a practice Stroop task (see below), participants randomized to the reappraisal or mindfulness conditions received standardized verbal instructions in their assigned strategies lasting approximately 10 min. The

Download English Version:

<https://daneshyari.com/en/article/10444443>

Download Persian Version:

<https://daneshyari.com/article/10444443>

[Daneshyari.com](https://daneshyari.com)