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Trait mindfulness and PTSD symptom clusters: Considering the influence of emotion dysregulation

Anthony N. Reffi*, Caitlin M. Pinciotti, Benjamin C. Darnell, Holly K. Orcutt

Department of Psychology, Northern Illinois University, DeKalb, IL 60115, United States of America

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ABSTRACT

Mindfulness is considered a multifaceted construct consisting of non-judging, non-reactivity, describing, observing, and acting with awareness. Mindfulness has received increased attention for its use in the treatment of psychological disorders, including posttraumatic stress disorder (PTSD), though little is known about how mindfulness facets relate to PTSD symptom clusters. The current study performed a path analysis to examine these relationships while controlling for emotion dysregulation in a sample of 298 college undergraduates with endorsed trauma histories. Hypotheses about the specific proposed relationships were partially supported. Above and beyond emotion dysregulation, non-judging was negatively related to the re-experiencing and negative alternations in cognitions and mood symptom clusters and was marginally related to hyperarousal. Additionally, acting with awareness was negatively related to hyperarousal, whereas non-reactivity was unexpectedly positively associated with hyperarousal. Overall, findings suggest the mindfulness facet most relevant to PTSD may be non-judging of inner experience.

1. Introduction

Posttraumatic stress disorder (PTSD) affects approximately 8.3% of individuals in the United States (Kilpatrick et al., 2013). Since its formal introduction in the Diagnostic and Statistical Manual of Mental Disorders (3rd ed.; DSM-III; American Psychiatric Association [APA], 1980), a considerable amount of research has been devoted to developing valuable interventions for the disorder. Although prolonged exposure (PE; Foa, Hembree, & Rothbaum, 2007) and cognitive processing therapy (CPT; Resick, Monson, & Chard, 2017) have garnered strong empirical support (for a meta-analysis, see Cusack et al., 2016), high dropout rates signal the need for continued development of and improvement upon these and other PTSD interventions (Kehle-Forbes, Meis, Spoont, & Polusny, 2016). Despite growing interest in the clinical utility of mindfulness (e.g., Davis & Hayes, 2011), there is insufficient evidence for its effectiveness in the treatment of PTSD (Management of Post-Traumatic Stress Working Group, 2016).

Mindfulness is defined as the nonjudgmental awareness of present moment experiences, including thoughts, feelings, and sensations (Kabat-Zinn, 1994). The *state* of mindfulness can be cultivated by focusing attention toward a select aspect of experience (e.g., breath) while allowing thoughts and emotions to arise and dissipate on their own (Garland, Gaylord, & Fredrickson, 2011). Repeated practice of acknowledging and letting go of internal experiences without judgment is thought to foster *trait* mindfulness, or a disposition to engage in this metacognitive awareness throughout daily life (Chambers, Gullone, & Allen, 2009; Garland et al., 2011). Cultivating trait mindfulness may be an important mechanism for symptom improvement (Fjorback, Arendt, Ørnbøl, Fink, & Walach, 2011), as mindfulness skills training is utilized as both a standalone intervention (e.g., mindfulness-based stress reduction, MBSR; Kabat-Zinn, 1982) and an adjunctive therapy (e.g., acceptance and commitment therapy, ACT; Hayes, Strosahl, & Wilson, 1999). Thus, mindfulness represents a potentially useful clinical tool amenable to many treatment modalities and conditions, including substance use (Chiesa & Serretti, 2014), and anxiety and depression (Hofmann, Sawyer, Witt, & Oh, 2010; Piet & Hougaard, 2011). Further, mindfulness may be appropriate for the treatment of PTSD in a variety of populations, including refugees (Hinton, Pich, Hofmann, & Otto, 2013), veterans (Vujanovic, Niles, Pietrefesa, Schmertz, & Potter, 2013), and survivors of intimate partner violence (Dutton, Bermudez, Matas, Majid, & Myers, 2013).

The emergence of mindfulness-based treatments for PTSD has prompted researchers to evaluate the processes by which mindfulness improves PTSD symptoms (e.g., Follette, Palm, & Pearson, 2006; Lang et al., 2012; Vujanovic et al., 2013). One such conceptualization is that mindfulness reduces avoidance behaviors by promoting acceptance of

* Corresponding author.
E-mail address: areffi@niu.edu (A.N. Reffi).

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trauma-related thoughts, memories, and feelings (Follette et al., 2006). Prominent models of PTSD implicate avoidance in the etiology and maintenance of PTSD because it functionally prevents emotional processing of a trauma (Foa & McLean, 2016). Reducing avoidance allows for the introduction of corrective safety information that promotes recovery from PTSD (Foa & Rauch, 2004; Rauch & Foa, 2006). Thus, the proposed mechanism by which mindfulness treats PTSD is theoretically consistent with PTSD treatment.

Treatment studies support the use of mindfulness for PTSD (e.g., Heffner, Crean, & Kemp, 2016; King et al., 2013; Owens, Walter, Chard, & Davis, 2012; Stephenson, Simpson, Martinez, & Kearney, 2017; Possemato et al., 2016). Veterans who participated in MBSR as an adjunct to usual care reported significant improvements compared to baseline in PTSD, depression, experiential avoidance, and behavioral activation at 2- and 6-months after enrollment (Kearney, McDermott, Malte, Martinez, & Simpson, 2012). MBSR also appears to be appropriate for survivors of childhood sexual abuse, producing significant reductions in PTSD at 8- and 24-weeks post-treatment, with the avoidance/numbing cluster of PTSD evidencing the largest improvements (Kimbrough, Magyari, Langenberg, Chesney, & Berman, 2010). Taken together, these findings lend support for mindfulness as a potentially viable treatment for PTSD. However, it is unclear which components of mindfulness are important for symptom improvement.

Researchers have distinguished between five facets of trait mindfulness: *non-judging*, *non-reactivity*, *describing*, *observing*, and *acting with awareness* (Baer et al., 2008). The non-judging of inner experience facet reflects the tendency to experience thoughts, feelings, and sensations without judgment or criticism; non-reactivity to inner experience means allowing thoughts, feelings, and sensations to occur without ruminating on them; describing is the ability to name or label these inner experiences with words; observing is the act of noticing or attending to both internal and external experience; and acting with awareness is present-centered attention (Baer et al., 2008). Several cross-sectional studies suggest the importance of specific mindfulness facets in the relationship to PTSD symptoms. Non-judging, non-reactivity, describing, and acting with awareness have all been associated with less overall PTSD symptom severity (Gonzalez et al., 2016; Kalill, Treanor, & Roemer, 2014; Schoorl, Van Mil-Klinkenberg, & Van Der Does, 2015; Vujanovic, Youngwirth, Johnson, & Zvolensky, 2009). However, associations between different facets and specific symptom clusters reveal more complex associations. For instance, studies have found non-judging negatively predicts avoidance (Thompson & Waltz, 2010), re-experiencing, and hyperarousal symptoms (Chopko & Schwartz, 2013; Vujanovic et al., 2009); non-reactivity predicts less re-experiencing and hyperarousal (Kalill et al., 2014); acting with awareness predicts less re-experiencing (Vujanovic et al., 2009), avoidance, and hyperarousal (Gonzalez et al., 2016); and describing predicts less hyperarousal (Chopko & Schwartz, 2013; Kalill et al., 2014). There may be several explanatory mechanisms linking individual mindfulness facets with different PTSD symptom clusters.

The evidence that non-judging negatively predicts all the PTSD symptom clusters is consistent with theoretical and empirical indications that acceptance of internal experiences following a trauma promotes resilience by reducing experiential and behavioral avoidance (Thompson, Arnkoff, & Glass, 2011). Similarly, remaining present with momentary experience (i.e., acting with awareness) may make it easier to notice the occurrence of re-experiencing and hyperarousal symptoms. Paying attention to these symptoms without judging or reacting to them could reduce the likelihood of becoming emotionally overwhelmed, thus allowing sufficient contact with them to facilitate distress tolerance and subsequent habituation (Thompson et al., 2011; Walser & Hayes, 2006). Increased attentional control may also lessen these symptoms by easing disengagement from threatening stimuli (Lang et al., 2012). Finally, the relationship between the ability to describe emotional experiences and less hyperarousal corresponds with neuroimaging research showing that affect labeling dampens amygdala reactivity to negative emotional images (Lieberman et al., 2007). Taken together, mindfulness appears to exert a synergistic effect on PTSD, wherein different facets may operate together to lessen symptom severity. Nonetheless, the significant variability among extant literature highlights the need for additional research on the relationship between specific mindfulness facets and PTSD symptom clusters.

The inconsistencies between mindfulness and PTSD might be attributable to the inclusion of different covariates across studies. For instance, non-reactivity emerged as an important predictor after controlling for negative affect, number of traumas, and time since trauma (Kalill et al., 2014). However, non-judging was most predictive in another study that controlled for experiential avoidance, alexithymia, thought suppression, and coping strategies (Thompson & Waltz, 2010). Most recently, acting with awareness, non-judging, and non-reactivity predicted fewer overall PTSD symptoms, re-experiencing symptoms, and negative alterations in cognitions and mood, above and beyond number of traumas and psychiatric diagnoses (Martin, Bartlett, Reddy, Gonzalez, & Vujanovic, 2018). Thus, an important consideration for mindfulness researchers is the identification of relevant covariates. One understudied covariate is emotion dysregulation.

General emotion dysregulation is a multifaceted construct that includes deficits in accepting, understanding, and attending to emotions, as well as difficulties engaging in goal-directed actions, exercising impulse control, and accessing regulatory strategies when experiencing distress (Gratz & Roemer, 2004). Numerous studies have linked emotion dysregulation with mindfulness (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006; Goodall, Trejnowska, & Darling, 2012; Vujanovic, Bonn-Miller, Bernstein, McKee, & Zvolensky, 2010). An exploratory factor analysis found that, along with attachment, measures of trait mindfulness and emotion dysregulation loaded together onto two factors that accounted for 52% of variance, suggesting considerable overlap between these constructs (Goodall et al., 2012). Additionally, emotion dysregulation is related to PTSD symptoms across many different samples (for a meta-analysis, see Seligowski, Lee, Bardeen, & Orcutt, 2015). Thus, the putative mechanisms by which mindfulness influences PTSD may be analogous to those of emotion dysregulation—namely, acceptance and understanding of emotional experience that in turn reduces impulsive, reactive responding and avoidant behavior (e.g., Tull, Barrett, McMillan, & Roemer, 2007).

2. The current study

Although Thompson and Waltz (2010) studied mindfulness and PTSD alongside covariates related to emotion dysregulation (i.e., alexithymia; Ridings & Lutz-Zois, 2014; Stasiewicz et al., 2012), to the authors' knowledge, no research to date has considered the influence of general emotion dysregulation in the relationship between trait mindfulness and PTSD. Notably, psychometric research has found that the measure of experiential avoidance utilized by Thompson and Waltz (2010) may measure general distress rather than levels of emotional acceptance (e.g., Wolgast, 2014; Zvolensky, Feldner, Leen-Feldner, & Yartz, 2005). These data raise concerns regarding the degree to which experiential avoidance was controlled for in their study and point to a limitation in the field's understanding regarding whether mindfulness might confer any treatment effects beyond those of emotion regulation skills training. Moreover, their study was carried out prior to the release of the DSM-5 and consequently was unable to test the relationship between study variables and the newest PTSD symptom cluster, negative alterations in cognitions and mood (APA, 2013). Therefore, controlling for general emotion dysregulation, a construct that encapsulates emotional acceptance, is an important step in disentangling how mindfulness relates to our latest understanding of PTSD clusters above and beyond related constructs. Doing so is instrumental in understanding how mindfulness might affect PTSD and would consequently inform how mindfulness can best be utilized in treatment.

The current study sought to investigate the unique contribution of