Effects of brief mindful breathing and loving-kindness meditation on shame and social problem solving abilities among individuals with high borderline personality traits

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ABSTRACT

Borderline personality disorder (BPD) is a severe mental condition characterized by a range of cognitive and behavioral vulnerabilities, including chronic shame and deficits in social problem solving (SPS) abilities. Little research however, has examined strategies that may alleviate shame and SPS deficits among individuals with BPD traits. Using a laboratory experimental approach, the present study compared the effects of a brief mindfulness versus loving-kindness meditation (LKM) induction on shame and SPS abilities in a sample of adults with high BPD traits. Eighty-eight participants underwent a shame induction procedure involving recall of a negative autobiographical memory. They were then randomly assigned to 10 min of mindful breathing or LKM, or a no-instruction condition. Shame and SPS abilities were assessed via visual analogue scales and the Means-Ends Problem Solving task respectively. Results indicated that there were significant decreases in shame from pre-to post-regulation in the mindfulness group versus the LKM and no-instruction groups. Groups did not differ on changes in SPS abilities from pre-to post-regulation. Overall, the findings support the efficacy of mindfulness as a strategy to regulate shame among individuals with BPD traits, and raises questions with regard to the utility of LKM in modulating shame in the context of high emotional arousal.

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1. Introduction

Borderline personality disorder (BPD) is a severe mental condition characterized by dysregulated affect, cognition, behaviors, and interpersonal relationships (American Psychiatric Association, 2013). It has been recognized as one of the most challenging psychological disorders to treat, in part due to the high prevalence of nonsuicidal self-injury and suicide attempts in this population (Paris & Zweig-Frank, 2001; Shearer, 1994). Research to date has identified a range of affective and cognitive vulnerabilities that underlie BPD's pathology, with two of which being shame and deficits in social problem solving (SPS) abilities. People with BPD tend to demonstrate chronic and high levels of shame (Rizvi, Brown, Bohus, & Linehan, 2011; Rüsch et al., 2007), so much so that BPD has been described as a chronic shame response (Crowe,

2004). Shame is in turn associated with a host of interpersonal difficulties, including impaired SPS abilities (Covert, Tangney, Maddux, & Heleno, 2003; Dixon-Gordon, Chapman, Lovasz, & Walters, 2011). Further, both shame and SPS deficits predict engagement in parasuicidal behaviors among BPD patients (Brown, Linehan, Comtois, Murray, & Chapman, 2009; Kehrer & Linehan, 1996). Given the etiological role of shame and associated SPS deficits in BPD, it is important to investigate avenues through which they can be targeted in psychological interventions.

Shame is an emotion that arises in response to real or perceived failures of the self in interactions with other people (Tangney, Marschall, Rosenberg, Barlow, & Wagner, 1994), and is very much evident in the negative self-concepts reported by BPD patients (Butler, Brown, Beck, & Grisham, 2002; Jovev & Jackson, 2006). Compared with patients with anxiety disorders and major depression, as well as healthy controls, BPD patients score higher on baseline levels of shame (Rüsch et al., 2007; Scheel et al., 2013). In another study, feelings of low self-worth and rejection (two features related to shame) were found to distinguish BPD patients from healthy controls and those with depressive disorders (Fertuck,

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Karan, & Stanley, 2016). Patients with BPD have also been found to respond to lab-induced negative evaluation with greater increases in shame, but not other emotions such as anxiety, relative to patients without personality disorders (Gratz, Rosenthal, Tull, Lejuez, & Gunderson, 2010). Further, shame predicts the severity of other BPD symptoms such as anger (Tangney, Wagner, Hill-Barlow, Marschall, & Gramzow, 1996).

Within the interpersonal domain, shame-proneness has been associated with poorer SPS abilities (Covert et al., 2003). In a study by Dixon-Gordon et al. (2011), individuals with high BPD traits demonstrated significant reductions in the number of relevant solutions and increases in the number of inappropriate solutions to interpersonal problems on a SPS task following a shame-inducing social rejection stressor. The relationship between severity of BPD features and SPS deficits was mediated by increases in negative mood following the stressor. The findings suggest that shame may negatively impact SPS abilities. The fact that shame reflects a general negative evaluation of the self suggests that it may result in lower confidence in solving interpersonal problems, which in turn makes individuals more likely to prematurely terminate their effort in generating and implementing effective interpersonal solutions (Covert et al., 2003). This is consistent with research demonstrating a negative relationship between shame-proneness and self-efficacy in solving interpersonal problems, as well as expected effectiveness of generated solutions (Covert et al., 2003). There is also evidence that shame impairs aspects of executive functioning, such as working memory, which may underlie poorer SPS abilities (Cavalera & Pepe, 2014). Cross-sectionally, BPD patients have also been found to exhibit greater SPS deficits compared to patients without BPD (Bray, Barrowclough, & Lobban, 2007). Taken together, these findings highlight shame and SPS deficits as distinct yet related features in the presentation of BPD.

Among various established interventions for BPD, DBT has received considerable empirical support (Kliem, Kröger, & Kosfelder, 2010). One core element of DBT involves the training of mindfulness, which refers to the ability to pay attention to experiences in the present moment with an attitude of curiosity and nonjudgment (Kabat-Zinn, 1994; Keng, Smoski, & Robins, 2011). Despite preliminary research demonstrating the etiological role of trait mindfulness in the conceptualization of BPD (Wupperman, Neumann, Whitman, & Axelrod, 2009), little work has examined the potential of mindfulness training in targeting shame and SPS deficits in the context of BPD. There are several mechanisms through which mindfulness training may help target the emotion of shame. First, the training may facilitate the process of decentering or reperceiving (Shapiro, Carlson, Astin, & Freedman, 2006), during which individuals learn to take a step back from their experiences and understand their thoughts and emotions as simply mental events, as opposed to truths that they have to identify with. Mindfulness training may also facilitate exposure and greater acceptance of negative emotions (Baer, 2003). By promoting nonjudgmental acceptance of one's emotions, the training theoretically may reduce the degree of aversion that people with BPD experience towards shame (Schoenleber & Berenbaum, 2012), which in turn results in lower shame. In a study by Sauer and Baer (2012), a brief mindfulness intervention resulted in lower anger and greater persistence on a distress-tolerance task compared to a ruminative self-focused attention condition after an angry mood induction. Given the strong association between shame and anger (Peters, Geiger, Smart, & Baer, 2014; Tangney et al., 1996), it is plausible that mindfulness training may also exert a beneficial effect on shame among people with BPD traits.

Mindfulness training may also be a promising strategy for reducing SPS deficits, either directly or through the modulation of negative affect such as shame. Previous research showed that induction of a concrete, experiential self-processing mode (which resembles mindfulness training), relative to an abstract self-processing mode, resulted in improved SPS abilities among depressed participants (Watkins & Moulds, 2005). The findings support the reduced concreteness theory, which posits that a concrete mode of processing facilitates more detailed and elaborate descriptions of problems, which in turn enables the generation of alternative solutions (Watkins & Moulds, 2005). Further, following research demonstrating that negative emotions can impair SPS abilities among people with BPD traits (Dixon-Gordon et al., 2011), modulation of negative emotions through mindfulness training may result in lower SPS deficits.

An alternative, relatively unexplored intervention that may be effective in reducing shame and SPS deficits is loving-kindness meditation (LKM). As a variant of meditation practice that shares similar origins with mindfulness (with both finding their roots in Buddhist traditions), LKM refers to systematic training in cultivating an emotion of loving acceptance towards all beings (Salzberg, 1995). Traditional Buddhist conceptualizations view loving-kindness as an antidote to self-hatred or shame (Salzberg, 1995). The practice of LKM typically begins with extending wishes of kindness towards the self, followed by a closed one, an acquaintance (or a neutral person), a difficult person, and ultimately to all living beings (Salzberg, 1995). In recent years, LKM has demonstrated efficacy in improving well-being and alleviating symptoms in a variety of conditions (see Galante, Galante, Bekkers, & Gallacher, 2014; Hofmann, Grossman, & Hinton, 2011), but little work has directly compared the relative clinical effects of LKM versus mindfulness training.

Of relevance to the present study, repeated sessions of LKM have been found to result in reductions in negative self-attitudes and depressive symptoms, as well as improvements in self-compassion among people with high levels of self-criticism (Shahar et al., 2015). In the latest treatment manual of DBT, LKM was included as a practice intended to enhance self-acceptance and compassion (Linehan, 2014). However, little research has examined the context in which LKM training is more or less helpful for affect modulation among individuals with BPD traits. On the one hand, the practice may reduce shame by helping these individuals cultivate an attitude of acceptance and kindness towards themselves; on the other hand, it is arguable that a brief practice may be too short to exert a shift in the long-standing self-critical attitudes typically held by these individuals. Therefore, whether brief LKM practice can be an effective strategy for lowering shame among people with BPD traits remains an open question.

Meanwhile, there is theoretical basis for postulating that LKM may result in beneficial shifts in SPS abilities. Research has shown that LKM increases positive emotions (Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008), which, according to the broaden-and-build theory, enable individuals to expand their thought-action repertoires as well as build greater personal, social, and cognitive resources (Fredrickson, 2001). These resources may translate into the ability to generate more effective solutions to social problem scenarios. Further, LKM practice has been shown to facilitate greater empathy and perspective taking abilities (Kristeller & Johnson, 2005; Leppma, 2011), elements that are potentially helpful for enhancing SPS abilities.

Up to this point, it may seem as though mindfulness meditation and LKM are completely distinct practices. In reality, these two practices are not mutually exclusive, and often viewed as complementary practices in the traditions from where they originate (Brahmavamso, 2006; Kang & Whittingham, 2010). In particular, mindfulness is seen as an element crucial for the development of kindness (i.e., one cannot cultivate kindness without developing an *awareness* of common humanity or struggles that exists within