Published in final edited form as:

Mindfulness (N Y). 2015 April 1; 6(2): 348–355. doi:10.1007/s12671-013-0268-9.

The Relation between Trait Mindfulness and Early Maladaptive Schemas in Men Seeking Substance Use Treatment

Ryan C. Shorey,

Department of Psychology, University of Tennessee, 1404 Circle Dr., Knoxville, TN 37996,
rshorey@utk.edu

Hope Brasfield,

Department of Psychology, University of Tennessee, 1404 Circle Dr., Knoxville, TN 37996

Scott Anderson, and

Cornerstone of Recovery, Louisville, TN

Gregory L. Stuart

Department of Psychology, University of Tennessee, 1404 Circle Dr., Knoxville, TN 37996

Abstract

Recent research has examined the relation between mindfulness and substance use, demonstrating that lower trait mindfulness is associated with increased substance use, and that mindfulness-based interventions help to reduce substance use. Research has also demonstrated that early maladaptive schemas are prevalent among individuals seeking substance use treatment and that targeting early maladaptive schemas in treatment may improve outcomes. However, no known research has examined the relation between mindfulness and early maladaptive schemas despite theoretical and empirical reasons to suspect their association. Therefore, the current study examined the relation between trait mindfulness and early maladaptive schemas among adult men seeking residential substance abuse treatment ($N = 82$). Findings demonstrated strong negative associations between trait mindfulness and 15 of the 18 early maladaptive schemas. Moreover, men endorsing multiple early maladaptive schemas reported lower trait mindfulness than men with fewer early maladaptive schemas. The implications of these findings for future research and treatment are discussed.

Keywords

Mindfulness; early maladaptive schemas; substance use; treatment

Introduction

Substance use and abuse is a serious problem. The lifetime and past year prevalence of alcohol use disorders (18% and 8.5%, respectively) and drug use disorders (11% and 2%, respectively) in the United States general population is high (Grant et al., 2004; Kessler et

al., 2005; Merikangas & McClair, 2012). Unfortunately, research has shown that only one in three individuals with a substance use disorder seeks treatment (Cunningham & Breslin, 2004). For individuals who do seek substance use treatment, research suggests that up to 70% may relapse (Walitzer & Dearing, 2006). Thus, there is a need for continued research on risk and protective factors for substance use that could be targeted in substance use treatment. Recent research has examined the early maladaptive schemas of individuals seeking substance use treatment (e.g., Roper, Dickson, Tinwell, Booth, & McGuire, 2010; Shorey, Stuart, & Anderson, 2012), as targeting early maladaptive schemas in substance use treatment has been theorized as a method to improve outcomes (Ball, 1998). Similarly, research has examined mindfulness-based interventions among individuals seeking substance use treatment, demonstrating positive outcomes (e.g., Bowen et al., 2009). However, we are unaware of any research that has examined the relationship between early maladaptive schemas and trait mindfulness.

Early Maladaptive Schemas and Substance Use

Early maladaptive schemas have been defined as a “broad, pervasive theme or pattern comprised of memories, emotions, cognitions, and bodily sensations regarding oneself and one’s relationships with others ... [that] are dysfunctional to a certain degree” (Young et al., 2003, p. 7). Young and colleagues (2003) have theorized that early maladaptive schemas develop early in life as a result of experiences that are dysfunctional with one’s family of origin or primary caretakers. Early maladaptive schemas interfere with healthy self-expression, autonomy, and interpersonal relationships, result in high levels of negative affect and distress, and are central themes that help to comprise one’s sense of self (Young et al., 2003). Research has demonstrated that early maladaptive schemas are extremely stable across time (Riso et al., 2006), and are theorized to underlie the development of psychopathology (Young et al., 2003). To date, 18 early maladaptive schemas have been identified (Young et al., 2003), which can be broadly categorized into five distinct domains, including disconnection and rejection: belief that one’s needs for safety, stability, security, empathy, respect, and acceptance will not be met; impaired autonomy: beliefs that interfere with one’s ability to survive, separate, perform successfully, and function independent of other people; impaired limits: inability to form long-term goals and a lack of responsibility to others; difficulty respecting and cooperating with others; other directedness: excessive focus on the needs, feelings, and desires of other people; and overvigilance and inhibition: focus on suppressing one’s feelings and impulses; high standards of performance and ethical behavior. The interested reader is referred to Young and colleagues (2003) for a detailed discussion of each of the 18 early maladaptive schemas.

Ball (1998) first theorized the relevance of early maladaptive schemas to substance use, suggesting that substance use may be a form of avoidant behavior to cope with the sequelae of early maladaptive schemas. Indeed, research has demonstrated that individuals seeking substance abuse treatment report greater endorsement of almost every early maladaptive schema, with the exception of unrelenting standards and self-sacrifice, than non-substance abusing populations (Brotchie, Meyer, Copello, Kidney, & Waller, 2004; Roper et al., 2010; Shorey, Anderson, & Stuart, 2011; 2013a, in press). In addition, research has demonstrated that early maladaptive schemas among individuals seeking substance abuse treatment do not

differ across substance use disorders (e.g., alcohol vs. opioid; Shorey, Stuart, & Anderson, 2013b). Further, among individuals seeking substance use treatment, early maladaptive schemas are associated with increased depressive symptoms (Shorey, Stuart, & Anderson, in press). Moreover, Ball (1998) developed a manualized treatment for substance use, termed Dual Focused Schema Therapy (DFST), which combines aspects of schema therapy (Young et al., 2003) and relapse prevention (Marlatt & Gordon, 1985). Preliminary research with DFST has shown improvements in substance use outcomes when compared to traditional 12-step therapy (Ball, 2007).

Mindfulness and Substance Use

Mindfulness has been defined as “paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally” (Kabat-Zinn, 1994, p. 4). That is, mindfulness can be conceptualized as a “way of being,” one that is open to fully experience all emotions, thoughts, and sensations in the present moment, without needing to change or push away (i.e., resist/avoid) any experience (Segal, Williams, & Teasdale, 2002) and stresses an attitude of acceptance, curiosity, and openness (Bishop et al., 2004). Research has demonstrated that individuals with higher levels of dispositional mindfulness report heightened well-being, including more positive emotions, quality of life, self-regulation, and improved relationship functioning (Brown & Ryan, 2003; Neff & Beretvas, 2012). Moreover, research on mindfulness-based interventions, which attempt to increase the level of mindfulness in daily life through mindfulness meditation exercises, has demonstrated robust improvements across a number of mental and physical health domains (see reviews by Eberth & Sedlmeier, in press; Keng, Smoski, & Robins, 2011; Sedlmeier et al., in press). Thus, it is clear that mindfulness is an important correlate of mental and physical health.

A few studies have demonstrated that individuals seeking substance use treatment evidence lower levels of trait mindfulness relative to healthy controls (Brooks, Kay-Lambkin, Bowman, & Childs, in press; Dakwar, Mariani, & Levin, 2011; Shorey, Brasfield, Anderson, & Stuart, in press). In addition, Mindfulness Based Relapse Prevention (MBRP; Bowen et al., 2009) has been developed as an outpatient, aftercare program for substance users who have already received inpatient or outpatient treatment. MBRP combines aspects of Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 1990), Mindfulness-Based Cognitive Therapy (MBCT; Segal et al., 2000), and relapse prevention (Marlatt & Gordon, 1985), and the only clinical trial to date has demonstrated that MBRP participants report less substance use at 4 months post-intervention relative to non-MBRP patients (Bowen et al., 2009). Additional research has examined mindfulness-based interventions for substance use, although due to methodological weaknesses in the literature (e.g., non-controlled studies, small sample sizes), conclusive data for their efficacy is lacking (see Zgierska et al., 2009 for review). Moreover, traditional 12-step treatment modalities discuss meditation as a central component of treatment (Zemore, 2007). Thus, mindfulness is an important construct in substance use assessment and treatment.

Early Maladaptive Schemas and Mindfulness

To our knowledge, no known study has examined the relation between early maladaptive schemas and mindfulness in any population. However, there are both empirical and theoretical reasons to suspect that early maladaptive schemas and mindfulness would be related and that this information could be important for future research and substance use treatment. For instance, past research has demonstrated trait mindfulness to be negatively associated with negative self schemas, a construct closely related to early maladaptive schemas, in a sample of college students (Oliver, McLachlan, Jose, & Peters, 2011). Additional research has demonstrated that early maladaptive schemas are negatively associated with psychological mindedness among college students (Cecero, Beitel, & Prout, 2008), and it has been speculated that one aspect of psychological mindedness is a heightened awareness and attention to emotional states, one aspect of mindfulness (Beitel, Ferrer, & Cecero, 2004). Thus, there are empirical reasons to suspect an association between early maladaptive schemas and mindfulness, although the existing research is limited.

As mentioned earlier, according to Young and colleagues' (2003) theory of early maladaptive schemas, one coping mechanism that individuals engage in when encountering unpleasant emotions and cognitions associated with early maladaptive schemas is avoidance, including substance use. In contrast, mindfulness is believed to decrease avoidance, as a core aspect of mindfulness is acceptance of all emotions, thoughts, and sensations, even unpleasant states (Baer, 2003). Therefore, given the theory of Young and colleagues (2003), and theoretical writings on mindfulness (e.g., Baer, 2003; Kabat-Zinn, 2003), we hypothesize that individuals high in early maladaptive schemas would report lower levels of trait mindfulness. This suggests, then, that mindfulness-based interventions could be useful for the treatment of early maladaptive schemas, and indeed this has been recently discussed (e.g., Germer, 2009; McKay, Lev, & Skeen, 2012). Similarly, spiritual self-schema (3-S) therapy attempts to target self-schemas, which are similar to early maladaptive schemas, through a non-sectarian Buddhist framework, which includes mindfulness (Avants & Margolin, 2004). Examining whether early maladaptive schemas and trait mindfulness are associated in a substance abuse treatment seeking population could help researchers and clinicians determine whether mindfulness-based interventions could be implemented to target and reduce such schemata.

Current Study

The purpose of the present study was to examine the relation between early maladaptive schemas and trait mindfulness in a sample of men seeking substance use treatment. In the current study, we followed the theoretical framework of Young and colleagues (2003) for early maladaptive schemas, which propose a key coping mechanism for schemas is avoidance. In contrast, mindfulness is theorized to decrease avoidance (i.e., Baer, 2003; Hauke, 2006; Kabat-Zinn, 2003). Therefore, we hypothesized that trait mindfulness would be negatively associated with early maladaptive schemas. We also predicted that individuals who endorsed multiple early maladaptive schemas would report lower trait mindfulness relative to individuals who endorsed fewer early maladaptive schemas.

Method

Participants

Patient records from a residential substance use treatment facility were used from May 2012 to August 2012 in the current study, as May 2012 was when the residential treatment center began assessing patients' trait mindfulness at intake to treatment. All male patient records during this time were included in the current study, which resulted in 82 patients. Female patients were excluded in the current study due to the small number of females admitted to the treatment facility during the period charts were reviewed. Table 1 displays participant demographic and diagnostic information.

Procedure

Patient records from a private residential substance abuse treatment facility, which is located in the Southeastern United States, were reviewed for the current study. Patients must have a primary substance use disorder and be 18 years of age or older in order to be admitted into the treatment facility. The treatment facility includes medical detoxification (as needed) and is a 28–30 day program that is guided by the traditional 12-step model. Once admitted into the treatment facility, and after medical detoxification (if necessary), patients are administered an extensive intake assessment, which includes both interviews and self-report measures (discussed below). Substance use disorder diagnoses are based on the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition – Text Revision (DSM-IV-TR) criteria (American Psychiatric Association, 2000). All diagnoses are determined through a treatment team consultation, with the support of the intake assessment, which includes a licensed psychologist, a psychiatrist, a general physician, and substance abuse counselors. All procedures for the current study were approved by the Institutional Review Board of the first author.

Measures

Trait Mindfulness—The 14-item version of the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003; Brown, West, Loverich, & Biegel, 2011) was used to examine trait mindfulness. The 14-item version does not contain the item “I drive places on ‘automatic pilot’ and then wonder why I went there,” which was included in the original 15-item version of the MAAS (Brown & Ryan, 2003). The substance use facility where patient charts were reviewed did not include this item because (1) patients cannot drive during residential treatment and (2) the treatment facility wanted the option to eventually examine pre-post treatment changes in trait mindfulness. The MAAS is said to assess a receptive state of mind, one in which awareness of what is taking place in the present moment is observed, without appraising or evaluating experience (Brown & Ryan, 2003). The 14-item version of the MAAS has demonstrated good reliability ($\alpha = .88$) and validity (Brown et al., 2011). All items are rated on a 6-point scale ($1 = \textit{Almost always}$; $6 = \textit{Almost never}$) and a mean score is obtained by adding all items and then dividing by the total number of items. Higher scores on the MAAS correspond to higher levels of trait mindfulness. Example items include “I find it difficult to stay focused on what’s happening in the present” and “I rush through activities without being really attentive to them.” Patients were also asked to indicate

whether they had previously received any training in “mindfulness or meditation” using a yes/no format.

Early Maladaptive Schemas—The Young Schema Questionnaire – Long Form, Third Edition (YSQ-L3; Young & Brown, 2003) was used to measure Young and colleagues’ (2003) conceptualization of early maladaptive schemas. The YSQ-L3 consists of 232 self-report items that assess the 18 early maladaptive schemas identified by Young and colleagues (2003), and was completed as part of patients’ intake assessment to the treatment facility. All items are rated on a six-point scale (*1 = completely untrue of me; 6 = describes me perfectly*). A score of 4 or greater on each item contributes to the total score for each specific early maladaptive schema (Young & Brown, 2003). That is, total scores for each early maladaptive schema is obtained by summing the number of responses rated as a 4, 5, or 6 (scores of 1–3 are recoded into “0”). Higher scores on each early maladaptive subscale indicate more maladaptive schema endorsement. Score ranges for the 18 early maladaptive schemas are: emotional deprivation (0–54), abandonment (0–102), mistrust/abuse (0–102), social isolation (0–60), defectiveness (0–90), failure (0–54), dependence (0–90), vulnerability (0–72), enmeshment (0–66), subjugation (0–60), self-sacrifice (0–102), emotional inhibition (0–54), unrelenting standards (0–96), entitlement (0–66), insufficient self-control (0–90), approval-seeking (0–84), negativity/pessimism (0–66), and punitiveness (0–90; Young & Brown, 2003; Young et al., 2003).

Utilizing established cutoff scores for each early maladaptive schema (Young & Brown, 2003) each schema can also be dichotomized into clinically interpretive categories that reflect low, medium, high, and very high schema endorsement. A score in the *low* range indicates that a particular schema is not a problem for an individual; a *medium* score indicates that a schema may be a problem for an individual and should be given further consideration; scores of *high* and *very high* indicate that a particular schema is a problem for an individual (Young & Brown, 2003). For ease of interpretation, we combined *high* and *very high* scores into one overall “high” category, and scores of *low* and *medium* into one overall “low” category. Previous research has demonstrated that the YSQ-L3 has good factor structure, validity, and reliability (e.g., Cockram et al., 2010; Saariaho, Saariaho, Karila, & Joukamaa, 2009).

Results

Analyses were conducted using SPSS version 20.0. Variables were first examined for positive skew and kurtosis. Results demonstrated that the early maladaptive schemas of defectiveness, dependence, enmeshment, and failure all had skewness values of greater than 2.0 and kurtosis values greater than 5.0, indicating that these variables were not normally distributed (Hildebrand, 1986). Thus, these four early maladaptive schemas were log-transformed prior to analyses to reduce skewness and kurtosis. The remaining early maladaptive schemas and trait mindfulness were all within normal ranges for skewness and kurtosis (e.g., skewness values less than 2.0; kurtosis values less than 4.0). Table 2 displays means, standard deviations, and score ranges for study variables.

We next examined our first hypothesis, which stated that early maladaptive schemas would be negatively associated with trait mindfulness. Table 3 displays bivariate correlations among early maladaptive schemas and trait mindfulness. Because previous research has demonstrated that early maladaptive schemas are consistently associated with each other at high levels (e.g., Shorey, Anderson, & Stuart, 2011), these correlations are not presented but are available from the first author upon request. As displayed, trait mindfulness was negatively associated with 15 of the 18 early maladaptive schemas. The three early maladaptive schemas that were not significantly associated with trait mindfulness were emotional deprivation, entitlement, and unrelenting standards. The remaining associations between early maladaptive schemas and trait mindfulness were large, for example, insufficient self-control ($r = -.52$), mistrust/abuse ($r = -.49$), defectiveness ($r = -.48$), and negativity/pessimism ($r = -.46$). Our second hypothesis stated that patients who endorsed having multiple early maladaptive schemas would report lower trait mindfulness than patients who reported only one (or zero) early maladaptive schema, after controlling for previous mindfulness experience. To examine this we first categorized each early maladaptive schema into high or low endorsement (Young & Brown, 2003) and then combined early maladaptive schemas into a single variable to reflect the total number of schemata endorsed. The average number of early maladaptive schemas rated as high by patients was 3.70 ($SD = 4.37$; Range = 0–17). Ten patients indicated that they had previously received training in mindfulness/meditation. An Analysis of Covariance was employed to examine group differences, with prior mindfulness/meditation experience entered as the covariate. Results demonstrated that patients who had more than one early maladaptive schema rated as high ($n = 46$) scored significantly lower on trait mindfulness than patients who scored high on only zero or one ($n = 36$) early maladaptive schema ($M = 3.95$, $SD = .95$ and $M = 4.69$, $SD = 1.00$ for multiple and single/none early maladaptive schema endorsement, respectively), $F = 13.12$, $p < .01$, Cohen's (1988) effect size $d = .75$.

Discussion

We found support for our first hypothesis, which stated that the majority of early maladaptive schemas would be associated with trait mindfulness. Indeed, 15 of the 18 early maladaptive schemas were negatively associated with trait mindfulness, and the majority of these relations were quite strong. For instance, the strongest relation was between trait mindfulness and the early maladaptive schema of insufficient self-control ($r = -.52$). This early maladaptive schema is characterized by impulsivity, low self-control, poor frustration and anger tolerance, and the avoidance of discomfort (Young et al., 2003), and previous research has also demonstrated that the insufficient self-control schema is one of the most commonly endorsed schema among individuals seeking substance use treatment (e.g., Shorey, Stuart, & Anderson, 2012). In essence, this schema appears to be the near opposite of trait mindfulness, which emphasizes the acceptance of discomfort, enhanced self-control and awareness (Baer, 2003). Although it is outside the scope of this manuscript to detail each early maladaptive schema that was negatively associated with mindfulness, we believe that it is likely that as each early maladaptive schema increases in strength, individuals become more fused with the negative cognitions and emotions present with each schema, reducing present moment awareness, and increasing maladaptive coping behaviors (e.g.,

substance use) to temporarily reduce the pain associated with schemata. This would be consistent with Young and colleagues' (2003) theory of early maladaptive schema, and suggest a common dispositional tendency across schemata is low trait mindfulness.

Our second hypothesis was also supported, which stated that individuals who endorsed multiple early maladaptive schemas would evidence lower trait mindfulness than individuals with one or no early maladaptive schemas. This finding is not surprising, as the presence of multiple early maladaptive schemas likely represents a low ability to be present and centered due to an increased interplay of negative cognitive beliefs and maladaptive behaviors associated with schemata. Still, this finding is important in that it is the first to demonstrate a relation between early maladaptive schemas and trait mindfulness. These findings raise the possibility, as discussed below, that mindfulness-based interventions may help to reduce early maladaptive schemas and/or the negative coping behaviors associated with schemata (e.g., avoidance).

This study provides preliminary evidence of the association between early maladaptive schemas and trait mindfulness, and there are numerous directions for future research on this relation. Certainly research is needed that replicates the current findings in other samples, including samples of women and non-substance abusing treatment seekers. Future research that also employs larger samples of individuals seeking substance use treatment should also examine whether the relation between early maladaptive schemas and trait mindfulness varies across diagnostic groups (i.e., alcohol vs. drug). Although research indicates that early maladaptive schemas are largely consistent across substance use diagnostic groups (i.e., Shorey et al., 2013b), there is minimal research on whether trait mindfulness varies across diagnostic groups, and to date the existing research in this area is mixed (e.g., Dakwar et al., 2011; Shorey, Brasfield et al., in press). Knowing this information could help to inform practitioners on whether individuals with certain substance use diagnoses may benefit more from interventions that concurrently target early maladaptive schemas and mindfulness.

Another area for future research is to investigate the longitudinal relation between early maladaptive schemas and trait mindfulness, including the developmental pathways that are associated with the development of these factors. According to Young and colleagues' (2003) theory, early maladaptive schemas are believed to develop during childhood, primarily due to noxious and traumatic experiences. Thus, it is plausible that the development of early maladaptive schemas precedes the development of, and heavily influences, trait mindfulness. However, it is unclear at this time what factors influence the development of trait mindfulness, a notable limitation in the existing mindfulness literature, although early maladaptive schemas may be one factor that influences its development. It is also possible that a third variable (e.g., self-regulation) mediates the relation between early maladaptive schemas and trait mindfulness or that trait mindfulness influences the development of early maladaptive schemas. Longitudinal research is needed to determine the causal relationships among variables.

Research should examine how substance use treatment affects both of these constructs, as well as whether interventions that specifically target either mindfulness or early maladaptive schemas results in improvements in the other. For instance, research has shown that a 12-

step based residential substance use treatment program that also focuses on early maladaptive schemas results in reduced schemata at the end of a 28–30 day treatment stay (Shorey, Stuart, Anderson, & Strong, in press). Moreover, early maladaptive schemas decrease after residential treatment that does not directly address schemata (Roper et al., 2010). However, to our knowledge, no known research has examined whether mindfulness increases during substance use treatment when treatment does not specifically focus on enhancing mindfulness. Following the theory of early maladaptive schemas proposed by Young and colleagues (2003), changes in early maladaptive schemas could be associated with enhanced mindfulness, although it is also possible that mindfulness-based interventions may result in reduced early maladaptive schemas, potentially through enhanced acceptance of discomfort, greater self-awareness of schemata and the negative influence they exert on one's life, and compassion toward one's self and schemata.

The current study has some limitations. The substance use facility where charts were reviewed does not employ structured diagnostic interviews to assess substance use disorders or other mental health disorders. Thus, we cannot be sure that all patient diagnoses were accurate and did not have information concerning potential comorbid diagnoses. Future research should employ structured diagnostic interviews to confirm substance use diagnoses and assess for comorbid mental health disorders. The cross-sectional design of the current study limits our ability to determine causality among study variables. Despite research and theory suggesting that early maladaptive schemas develop early in life (e.g., Young et al., 2003), longitudinal research is needed to determine whether early maladaptive schemas precede the development of, or predicts, trait mindfulness. Longitudinal research is also needed that examines early maladaptive schemas and trait mindfulness as predictors of treatment outcomes. Future research with larger samples should also investigate which early maladaptive schemas best predict low mindfulness (e.g., multiple regression with all 18 schemas predicting mindfulness). Our sample was primarily non-Hispanic Caucasian in ethnicity, limiting the generalizability of our findings to more diverse populations. Moreover, the use of a treatment-seeking, all male sample future limits the generalizability of findings. Finally, research should examine additional models of schemas in conjunction with Young and colleagues' (2003) schema conceptualization. For instance, Stein (1996) and Stein and Corte (2007) have discussed the interrelatedness of positively and negatively valenced self-schemas. Research could extend this work into the relation between trait mindfulness and both positive and negative schemas.

In summary, findings demonstrated that 15 of 18 early maladaptive schemas were negatively associated with trait mindfulness. Moreover, individuals who endorsed having multiple early maladaptive schemas reported lower trait mindfulness than individuals with zero or one early maladaptive schema. Thus, this study provides preliminary support for the relation between these two clinically important constructs that have gained increased research attention in recent years. Additional research in this area is needed, however, including research into whether mindfulness-based interventions help to reduce early maladaptive schemas or negative coping behaviors (e.g., avoidance through substance use) associated with early maladaptive schemas, thus improving substance use treatment outcomes.

Acknowledgements

This work was supported, in part, by grants F31AA020131 and K24AA019707 from the National Institute on Alcohol Abuse and Alcoholism (NIAAA) awarded to the first and last authors, respectively. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIAAA or the National Institutes of Health.

References

- American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4th ed.. Washington, DC: Author; 2000. text rev
- Avants SK, Margolin A. Development of spiritual self-schema (3-S) therapy for the treatment of addictive and HIV risk behavior: A convergence of cognitive and buddhist psychology. *Journal of Psychotherapy Integration*. 2004; 14:253–289.
- Ball SA. Manualized treatment for substance abusers with personality disorders: Dual focus schema therapy. *Addictive Behaviors*. 1998; 23:883–891. [PubMed: 9801723]
- Ball SA. Comparing individual therapies for personality disordered opioid dependent patients. *Journal of Personality Disorders*. 2007; 21:305–321. [PubMed: 17536942]
- Baer RA. Mindfulness training as a clinical intervention: A conceptual and empirical review. *Clinical Psychology: Science and Practice*. 2003; 10:125–143.
- Beitel M, Ferrer E, Cecero JJ. Psychological mindedness and awareness of self and others. *Journal of Clinical Psychology*. 2005; 61:739–750. [PubMed: 15546143]
- Bishop SR, Lau M, Shapiro S, Carlson L, Anderson ND, Carmody J, Devins G. Mindfulness: A proposed operational definition. *Clinical psychology: Science and practice*. 2004; 11(3):230–241.
- Bowen S, Chawla N, Collins SE, Witkiewitz K, Hsu S, Grow J, Marlatt GA. Mindfulness-based relapse prevention form substance-use disorders: A pilot efficacy trial. *Substance Abuse*. 2009; 30:295–305. [PubMed: 19904665]
- Brooks M, Kay-Lambkin F, Bowman J, Childs S. Self-compassion amongst clients with problematic alcohol use. *Mindfulness*. In press
- Brothie J, Meyer C, Copello A, Kidney R, Waller G. Cognitive representations in alcohol and opiate abuse: The role of core beliefs. *British Journal of Clinical Psychology*. 2004; 43:337–342. [PubMed: 15333236]
- Brown KW, Ryan RM. The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*. 2003; 84:822–848. [PubMed: 12703651]
- Brown KW, West AM, Loverich TM, Biegel GM. Assessing adolescent mindfulness: Validation of an adapted Mindful Attention Awareness Scale in adolescent normative and psychiatric populations. *Psychological Assessment*. 2011; 23:1023–1033. [PubMed: 21319908]
- Cecero JJ, Beitel M, Prout T. Exploring the relationships among early maladaptive schemas, psychological mindedness and self-reported college adjustment. *Psychology and Psychotherapy: Theory, Research and Practice*. 2008; 81:105–118.
- Cockram DM, Drummond PD, Lee CW. Role and treatment of early maladaptive schemas in Vietnam veterans with PTSD. *Clinical Psychology and Psychotherapy*. 2010; 17:165–182. [PubMed: 20486158]
- Cunningham JA, Breslin FC. Only one in three people with alcohol abuse or dependence ever seek treatment. *Addictive Behaviors*. 2004; 29:221–223. [PubMed: 14667433]
- Dakwar E, Mariani JP, Levin FR. Mindfulness impairments in individuals seeking treatment for substance use disorders. *The American Journal of Drug and Alcohol Abuse*. 2011; 37:165–169. [PubMed: 21410417]
- Eberth J, Sedlmeier P. The effects of mindfulness meditation: a meta-analysis. *Mindfulness*. 2012; 3:174–189.
- Germer, C. *Mindful Path to Self-Compassion: Freeing Yourself from Destructive Thoughts and Emotions*. Guilford Press; 2009.

- Grant BF, Stinson FS, Dawson DA, Chou SP, Ruan WJ, Pickering RP. Co-occurrence of 12-month alcohol and drug use disorders and personality disorders in the United States. *Archives of General Psychiatry*. 2004; 61:361–368. [PubMed: 15066894]
- Hauke G. Self-regulation and mindfulness. *European Psychotherapy*. 2006; 6:19–52.
- Hildebrand, DK. Statistical thinking for behavioral scientists. Boston: Duxbury; 1986.
- Kabat-Zinn, J. Full Catastrophe Living: Using The Wisdom of Your Body and Mind to Face Stress, Pain, and Illness. New York: Dell Publishing; 1990.
- Kabat-Zinn, J. Wherever you go, there you are. New York: Hyperion; 1994.
- Kabat-Zinn J. Mindfulness-based interventions in context: Past, present, and future. *Clinical Psychology: Science & Practice*. 2003; 10:144–156.
- Keng S, Smoski MJ, Robins CJ. Effects of mindfulness on psychological health: A review of empirical studies. *Clinical Psychology Review*. 2011; 31:1041–1056. [PubMed: 21802619]
- Kessler RC, Berglund P, Demler O, Jin R, Walters EE. Lifetime prevalence and age-of-onset distributions of *DSM-IV* disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*. 2005; 62:593–602. [PubMed: 15939837]
- Marlatt, GA.; Gordon, JR. Relapse prevention. New York: Guilford; 1985.
- McKay, M.; Lev, A.; Skeen, M. Acceptance and Commitment Therapy for Interpersonal Problems: Using Mindfulness, Acceptance, and Schema Awareness to Change Interpersonal Behaviors. New Harbinger Publications; 2012.
- Merikangas KR, McClair VL. Epidemiology of substance use disorders. *Human Genetics*. 2012; 131:779–789. [PubMed: 22543841]
- Neff KD, Beretvas SN. The role of self-compassion in romantic relationships. *Self and Identity*. 2012 Online first.
- Oliver JE, O'Connor JA, Jose PE, McLachlan K, Peters E. The impact of negative schemas, mood and psychological flexibility on delusional ideation-mediating and moderating effects. *Psychosis*. 2012; 4:6–18.
- Riso LP, Froman SE, Raouf M, Gable P, Maddux RE, Turini-Santorelli N, Penna S, Blandino JA, Jacobs CH, Cherry M. The long-term stability of early maladaptive schemas. *Cognitive Therapy and Research*. 2006; 30:515–529.
- Roper L, Dickson JM, Tinwell C, Booth PG, McGuire J. Maladaptive cognitive schemas in alcohol dependence: Changes associated with a brief residential abstinence program. *Cognitive Therapy and Research*. 2010; 34:207–215.
- Saariaho T, Saariaho A, Karila I, Joukamaa M. The psychometric properties of the Finnish young schema questionnaire in chronic pain patients and a non-clinical sample. *Journal of Behavior Therapy and Experimental Psychiatry*. 2009; 40:158–168. [PubMed: 18804198]
- Segal, ZV.; Williams, JMG.; Teasdale, JD. Mindfulness-based cognitive therapy for depression: A new approach to preventing relapse. New York, NY: Guilford Press; 2002.
- Sedlmeier P, Eberth J, Schwarz M, Zimmermann D, Haarig F, Jaeger S, Kunze S. The psychological effects of meditation: A meta-analysis. *Psychological Bulletin*. 2012; 138:1139–1171. [PubMed: 22582738]
- Shorey RC, Anderson S, Stuart GL. Early maladaptive schemas in substance use patients and their intimate partners: A preliminary investigation. *Addictive Disorders & Their Treatment*. 2011; 10:169–179. [PubMed: 22745593]
- Shorey RC, Brasfield H, Anderson S, Stuart GL. Mindfulness deficits in a sample of substance abuse treatment seeking adults: A descriptive investigation. *Journal of Substance Use*. In press
- Shorey RC, Stuart GL, Anderson S. The early maladaptive schemas of an opioid-dependent sample of treatment seeking young adults: A descriptive investigation. *Journal of Substance Abuse Treatment*. 2012; 42:271–278. [PubMed: 22014405]
- Shorey RC, Stuart GL, Anderson S. Early maladaptive schemas among young adult male substance abusers: A comparison with a non-clinical group. *Journal of Substance Abuse Treatment*. 2013a; 44:522–527. [PubMed: 23312769]

- Shorey RC, Stuart GL, Anderson S. Differences in early maladaptive schemas in a sample of alcohol and opioid dependent women: Do schemas vary across disorders? *Addiction Research & Theory*. 2013b; 21:132–140. [PubMed: 23494129]
- Shorey RC, Stuart GL, Anderson S. Differences in early maladaptive schemas among a sample of young adult female substance abusers and a non-clinical comparison group. *Clinical Psychology & Psychotherapy*. In press
- Shorey RC, Stuart GL, Anderson S. Do gender differences in depression remain after controlling for early maladaptive schemas? An examination in a sample of opioid dependent treatment seeking adults. *Clinical Psychology & Psychotherapy*. In press
- Shorey RC, Stuart GL, Anderson S, Strong DR. Changes in early maladaptive schemas after residential treatment for substance use. *Journal of Clinical Psychology*. *Journal of Clinical Psychology*. In press
- Stein KF. The self-schema model: A theoretical approach to the self-concept in eating disorders. *Archives of Psychiatric Nursing*. 1996; 10:96–109. [PubMed: 8935986]
- Stein KF, Corte C. Identity impairment and the eating disorders: Content and organization of the self-concept in women with anorexia nervosa and bulimia nervosa. *European Eating Disorders Review*. 2007; 15:58–69. [PubMed: 17676674]
- Walitzer KS, Dearing RL. Gender differences in alcohol and substance use relapse. *Clinical Psychology Review*. 2006; 26:128–148. [PubMed: 16412541]
- Young, JE.; Brown, G. Sarasota, FL: Professional Resource Exchange; 2003. Young schema questionnaire.
- Young, JE.; Klosko, J.; Weishaar, ME. Schema therapy: A practitioner's guide. New York: Guilford Press; 2003.
- Zemore SE. A Role for Spiritual Change in the Benefits of 12-Step Involvement. *Alcoholism: Clinical and Experimental Research*. 2007; 31:76–79.
- Zgierska A, Rabago D, Chawla N, Kushner K, Koehler R, Marlatt A. Mindfulness meditation for substance use disorders: a systematic review. *Substance Abuse*. 2009; 30:266–294. [PubMed: 19904664]

Table 1**Participants Demographics**

Diagnosis, %	
Alcohol Dependence	56.1
Opioid Dependence	22
Polysubstance Dependence	13.4
Cannabis Dependence	3.7
Amphetamine Dependence	2.4
Sedative/Hypnotic/Anxiolytic Dependence	2.4
Length of Use in Years (M, SD)	
Alcohol Dependence	15.57 (11.98)
Opioid Dependence	5.44 (5.47)
Polysubstance Dependence	5.70 (4.78)
Cannabis Dependence	18.33 (12.58)
Amphetamine Dependence	14.00 (8.48)
Sedative/Hypnotic/Anxiolytic Dependence	14.50 (12.02)
Race, %	
Non-Hispanic Caucasian	95.1
African American	2.4
Hispanic	2.4
Age (M, SD)	38.19 (12.34)
Employed Full-Time, %	37.8
Education Completed in Years (M, SD)	13.59 (2.36)

Table 2

Means, Standard Deviations, and Score Range among Study Variables

	Mean	Standard Deviation	Range
MAAS	4.28	1.03	1.5–6
Abandonment	14.34	21.22	0–94
Approval-Seeking	13.87	17.48	0–84
Defectiveness	8.84	16.05	0–76
Dependence	7.93	15.37	0–90
Emotional Deprivation	6.72	10.24	0–43
Emotional Inhibition	7.15	10.34	0–47
Enmeshment	4.67	10.40	0–66
Entitlement	8.89	11.17	0–49
Failure	5.17	10.11	0–51
Insufficient Self-Control	20.65	22.32	0–87
Mistrust/Abuse	13.48	19.31	0–77
Negativity/Pessimism	13.18	16.77	0–59
Punitiveness	18.63	18.11	0–69
Self-Sacrifice	29.06	25.08	0–100
Social Isolation	7.67	13.26	0–50
Subjugation	7.22	12.32	0–46
Unrelenting Standards	22.41	21.19	0–90
Vulnerability	7.60	9.73	0–40

Note: raw scores were used to obtain means, standard deviations, and score ranges for all variables.

Table 3

Bivariate Correlations between Trait Mindfulness and Early Maladaptive Schemas.

Early Maladaptive Schema	Trait Mindfulness (<i>r</i>)
Abandonment	-.40***
Approval-Seeking	-.41***
Defectiveness	-.48***
Dependence	-.45***
Emotional Deprivation	-.21
Emotional Inhibition	-.27*
Enmeshment	-.44***
Entitlement	-.18
Failure	-.40***
Insufficient Self-Control	-.52***
Mistrust/Abuse	-.49***
Negativity/Pessimism	-.46***
Punitiveness	-.31**
Self-Sacrifice	-.31**
Social Isolation	-.30**
Subjugation	-.34**
Unrelenting Standards	-.20
Vulnerability	-.42***

*
 $p < .05$ **
 $p < .01$ ***
 $p < .001$