



Mindfulness as Predictor of Treatment Outcome in Cognitive Behavioral and Acceptance and Commitment Therapies



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Introduction

- A recent surge in research has focused on validating the effectiveness of Acceptance and Commitment Therapy (ACT). Though the importance of establishing empirically supported treatments is evident, understanding efficacy moderators is essential in order to interpret varied responses to therapy (Gilgun, 2004). Mindfulness is an integral skill utilized in ACT (ACT; Hayes et al., 1999) in which one's state of consciousness incorporates focused, nonjudgmental attention on the present moment (Kabat-Zinn, 2003; Linehan, 1993). Baer and colleagues (2004) propose mindfulness is comprised of four elements: observing, describing, acting with awareness, and accepting without judgment.
- The relationship between treatment outcome and mindfulness incites two unique outcomes. First, it can be hypothesized that higher levels of mindfulness prior to ACT therapy prime a person to benefit by increasing receptivity to ACT's principle skill. For instance, accepting without judgment aligns with the ACT tenant of increasing willingness to experience internal and external events. Alternatively, given ACT's reliance on teaching mindfulness skills, it can be hypothesized that ACT's therapeutic effect will be inversely related to a person's prior mindfulness level. This relationship will be evaluated in participants receiving ACT in an outcome study comparing ACT to traditional Cognitive-Behavioral Therapy (CBT) to determine if outcome depends on treatment condition. The present researchers suggest a main effect for baseline mindfulness on change in symptoms regardless of condition. Further, it is posited that the effects of baseline mindfulness on symptom reduction will depend on condition.

Method

- The present study evaluates the effects of differential levels of mindfulness at baseline among a sample of health professional graduate students seeking treatment at a university counseling center (N = 49). Forty clients were female (81%) and nine were male (19%). The mean age was 27.4 (SD = 6.5) and ethnicities represented were African Americans (4%), Asian Americans (12%), Caucasian Americans (73%), and other (11%). Their most prevalent Axis I diagnoses according to the Diagnostic and Statistical Manual-IV-Text Revision (2000) were variations of Major Depressive Episode (N = 11) and Generalized Anxiety Disorder (N = 5).
- Participants were randomly assigned to ACT or CBT treatment condition. They were evaluated before treatment and three months thereafter. Self-report measures of mindfulness, anxiety, and depression were administered. Treatment outcome was evaluated using the Beck Anxiety Inventory (BAI) and the Beck Depression Inventory-II (BDI-II). These measures demonstrate high internal consistency and test-retest reliability (Dozois et al., 1998; Fydrich et al., 1992, respectively). The measure of mindfulness utilized in this investigation is the Kentucky Inventory of Mindfulness Skills (KIMS) (Baer et al., 2004).
- Multiple regressions were utilized in this investigation since researchers were interested in the moderating effects of mindfulness elements in the relationship between anxiety and mood improvement depending on condition, controlling for anxiety and depressive symptoms at baseline.

Results

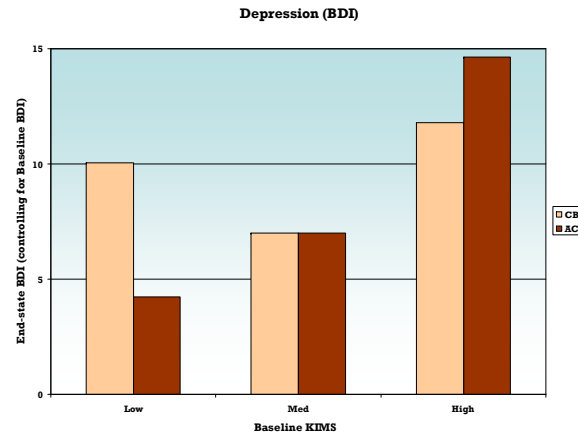


Figure 1.

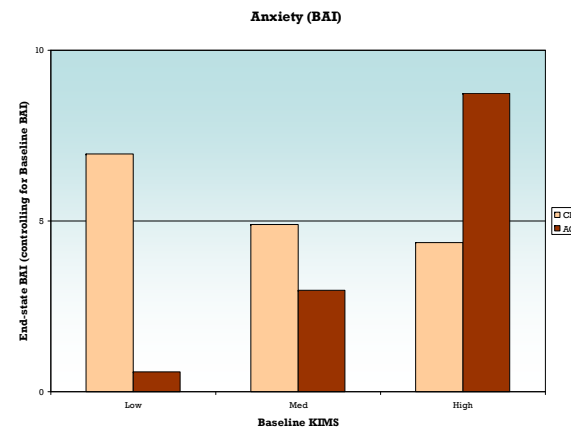


Figure 2.

- This sample consisted of 49 participants. Their mean baseline anxiety symptoms, according to the BAI, was 10.6 (SD = 8.2). Their mean baseline depressive symptoms, according to the BDI-II, was 16.6 (SD = 10.9). Their baseline mean total mindfulness was 80.7 (SD = 18.7). Analyses were conducted using baseline mindfulness element statistics, condition (i.e., ACT or CBT), and to control for baseline anxiety and depressive symptoms, changes in BAI and BDI-II from baseline to time two (Δ BAI: mean = -3.8, SD = 8.6 and Δ BDI-II: mean = -7.5, SD = 10.9). Correlation analyses indicate anxiety symptoms at baseline were significantly related to total mindfulness ($r = -.546, p < .001$). Correlation analyses indicate depressive symptoms at baseline were significantly related to total mindfulness ($r = -.588, p < .001$).
- Interaction terms were calculated by multiplying condition (CBT = 1, ACT = 2) by mindfulness scores. To prevent inflation, the participant mindfulness data were centered by subtracting mindfulness mean from each person's raw score.
- After controlling for treatment condition, the association between mindfulness and BDI-II change was robust ($\Delta R^2 = .106, p = .029$). There was no evidence that the relationship between mindfulness and improvement in mood varied as a function of treatment condition ($\Delta R^2 = .011, p = .479$). Specifically, patients receiving ACT did not demonstrate more or less improvement in mood based on their level of mindfulness as compared to participants in the CBT condition.
- After controlling for treatment condition, the association between mindfulness and BAI change was strong, ($\Delta R^2 = .156, p = .007$). However, the interaction between condition and mindfulness did not indicate a significant relationship with changes in anxiety ($\Delta R^2 = .001, p = .852$). Again, baseline levels of mindfulness did not lead to variations in anxiety reduction for participants in ACT or CBT.
- Generally, Δ BAI and Δ BDI-II were most significantly associated with mindfulness at baseline, regardless of any interaction according to condition (KIMS in BAI regression: $b = .191, p = .007$; KIMS in BDI-II regression: $b = .198, p = .029$). Baseline KIMS was examined according to high, medium, and low levels by calculating the baseline mean and subtracting or adding one standard deviation to determine cut-offs.

Discussion

- These results are consistent with the literature's suggestion that mindfulness is an important factor in symptom reduction. However, neither hypothesis was confirmed. Indeed, clients with higher levels of mindfulness improved more significantly regardless of their treatment condition. See Figures 1 and 2 for specific trends observed in symptom reduction according to these groups and indications of end-state symptomatology controlling for baseline symptom levels.
- According to these findings, it appears mindfulness is an important skill regardless of treatment approach. Perhaps mindfulness's role in improvement speaks to the underlying mechanisms of change observed in CBT and ACT. Although ACT is billed as a variation on CBT, the means by which clients improve may be the same. Also, these results may indicate the use of mindfulness-based prevention strategies and their general applicability to good mental health.
- Limitations of the present study should be noted (e.g., a small sample size). Over time, this problem will be remedied. Also, it should be noted that ACT and CBT were administered by 11 different staff therapists. Although each was sufficiently trained in ACT and CBT, they may have held some allegiance to one treatment compared to the other and therefore felt more comfortable and more skilled in one approach. Future research should continue to look at mindfulness's role in enhancing treatment outcome.