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Review

Acceptance and commitment therapy for anxiety and OCD spectrum disorders: An empirical review

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ABSTRACT

A fair amount of research exists on acceptance and commitment therapy (ACT) as a model and a treatment for anxiety disorders and OCD spectrum disorders; this paper offers a quantitative account of this research. A meta-analysis is presented examining the relationship between psychological flexibility, measured by versions of the Acceptance and Action Questionnaire (AAQ and AAQ-II) and measures of anxiety. Meta-analytic results showed positive and significant relationships between the AAQ and general measures of anxiety as well as disorder specific measures. Additionally, all outcome data to date on ACT for anxiety and OCD spectrum disorders are reviewed, as are data on mediation and moderation within ACT. Preliminary meta-analytic results show that ACT is equally effective as manualized treatments such as cognitive behavioral therapy. Future directions and limitations of the research are discussed.

Contents

Anxiety disorders are characterized by an increased sensitivity to threat, persistent and repetitive thoughts, physiological arousal, and avoidance behaviors (Craske et al., 2009). Approximately 33.7% of adults and 32.4% of adolescents report the presence of an anxiety disorder within their lifetimes (Kessler, Petukhova, Sampson, Zaslavsky, & Wittchen, 2012). Cognitive behavior therapy (CBT), including exposure exercises, are the most supported treatments for anxiety disorders (Hofmann & Smits, 2008; Norton & Price, 2007; Tolin, 2010), and should be considered first line treatments. Nevertheless, these treatments are not successful for all individuals. This is one of the reasons there has been growing interest in examining additional treatment options for anxiety and obsessive compulsive and related disorders.

Many of these additional treatment options have been conceptualized under the larger umbrella of CBT, and are often referred to as "newer generations of CBT" (Twohig, Woidneck, & Crosby, 2013), "contextual CBT" (S.C. Hayes, Villatte, Levin, & Hildebrandt, 2011), and "third wave behavior therapy" (Hayes, 2004). One contextual CBT that has demonstrated promise in this domain is acceptance and commitment therapy (ACT; Hayes, Strosahl, & Wilson, 2012). This means that while ACT is part of the CBT tradition, it is arguably a distinct form of CBT just like other versions of CBT such as exposure with response prevention or dialectical behavior therapy (Twohig et al., 2013).

One key feature of ACT is that it is based on the pragmatic philosophical framework of science that underlines modern behavioral psychology known as functional contextualism (Hayes et al., 2012). Relatedly, much of its development comes from basic behavioral

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research including research on language and cognition, specifically relational frame theory (RFT) and rule-governed behavior (Hayes et al., 2012). In this model, attention is placed on the context and the function of psychological events rather than the content, form, and frequency with which they occur (S.C. Hayes et al., 2011). ACT aims to increase *psychological flexibility* (Hayes, Luoma, Bond, Masuda, & Lillis, 2006), which is the ability to contact the present moment without restraints, within the existing context, in order to change or persist in value driven actions. Responding rigidly to internal experiences (due to a general intolerance of internal distress and/or a strong reliance on verbal rules), referred to as *psychological inflexibility*, can be problematic because it restricts behavior and opportunities for external reinforcement, resulting in a lower quality of life. Alternatively, the ability to flexibly attend to and interact with anxiety allows actions to be based on what is important to the person and can increase behavioral flexibility. Within this model, psychological inflexibility is a pragmatically useful target in the treatment of many forms of clinical issues.

This clinical model aims to increase psychological flexibility through six core processes of change. These processes are not in and of themselves ACT, but are accessible constructs to target psychological flexibility (Twohig et al., 2013). Furthermore, these processes link basic learning principles to therapeutic techniques. The six processes within this model include acceptance, defusion, self as context, present moment awareness, values, and committed action (Hayes et al., 2006). A recent meta-analysis examined laboratory based component studies that explored the function of these intervention processes within ACT and contextual CBT models. Of the 66 component studies reviewed, results showed significant effect sizes for acceptance, defusion, present moment awareness, and values compared to inactive control components (Levin, Hildebrandt, Lillis, & Hayes, 2012), supporting the potential clinical utility of targeting each of these processes.

To our knowledge, no study has quantitatively reviewed the extant literature on the relationship between psychological inflexibility and anxiety symptomology (although see Hayes et al., 2006 for an early meta-analysis), or quantitatively reviewed the effects of ACT relative to comparison conditions specifically for anxiety and OCD spectrum disorders. In the current review, a meta-analysis was conducted examining the relationship between psychological inflexibility and measures of anxiety. Additionally, a systematic review was conducted on all outcome data to date on ACT for anxiety and OCD spectrum disorders, as well as data on mediation and moderation effects. Finally, a preliminary meta-analysis was conducted on ACT randomized controlled trials (RCTs) for anxiety disorders to examine potential aggregated between group effect sizes. The primary aims of this study are to provide an integrated empirical review of the ACT literature as it applies to anxiety and OCD spectrum disorders, highlighting the relationship of ACT's key process of change and clinical targets in anxiety symptomatology, the impact of ACT in targeting this process for various anxiety disorders, as well as providing an initial quantitative summary of effect sizes.

1. Methods

1.1. Procedure: meta-analysis of the relation between psychological inflexibility and anxiety

A meta-analysis was conducted on studies examining the relationship of anxiety symptoms to the Acceptance and Action Questionnaire (AAQ and AAQ-II), the standard measure used to assess psychological flexibility/inflexibility. The original AAQ (Hayes et al., 2004) is a 9-item self-report measure of psychological inflexibility. Lower scores are associated with lower levels of psychological inflexibility and experiential avoidance (a key subprocess that contributes to inflexibility). This measure has been shown to have good convergent and discriminant validity (Hayes et al., 2004). Revisions were made to the AAQ to create the AAQ-II (Bond et al., 2011), which is a 7-item self-report measure of psychological inflexibility. Items are rated on a 7-point scale ranging from *never true* to *always true* with higher scores indicating greater psychological inflexibility. While there is no established cutoff for the AAQ-II, scores that fall above a range of 24–28 are associated with higher levels of psychological distress (Bond et al., 2011). Bond et al. (2011) reported good test–retest reliability ($r = .81$) at a three-month interval and good internal consistency ($\alpha = .78–87$). Moderate to high convergent validity has been demonstrated with the BDI-II, the BAI, the SCL-90-R, and the White Bear Suppression Inventory (WBSI) with correlations ranging from .58 to .71.[1] The AAQ-II has better psychometric consistency than the original AAQ; the correlation with the original AAQ is strong ($r = .82$; Bond et al., 2011).

To synthesize the relationship between the AAQ and other measures of anxiety, anxiety disorders, and OCD-spectrum disorder symptoms, correlation data for the AAQ/AAQ-II and anxiety symptoms were retrieved through the web database, EBSCOhost (i.e., PsychINFO, PsycArticles). The search criteria included the descriptors of "Acceptance and Action Questionnaire," "experiential avoidance," "psychological inflexibility," "anxiety," "anxiety disorder," and specific anxiety/OCD spectrum disorders (i.e., "GAD," "OCD," "compulsive skin picking," "PTSD," "social anxiety," "social phobia," "panic disorder," "specific phobia," "OCD spectrum disorders," "trichotillomania," "Tourette disorder," "tic disorders") and included all years up to June of 2013. Of the 183 articles that were identified in the original search, 49 articles were included in this review. Some articles contained more than one study, thus a total of 63 studies were included in the analysis. Articles were included that reported a correlation between the AAQ/AAQ-II and measures of anxiety symptoms. All variations of the AAQ were included in this study including the published versions of the AAQ and AAQ-II, as well as the 16-item version of the AAQ, the 10-item version of the AAQ-II, and translations of the AAQ in Spanish, German, and Albanian. Cross-referencing was conducted using the search criteria to identify additional articles.

Articles were excluded if they did not include any version of the AAQ or AAQ-II ($n = 33$), did not include a measure of anxiety ($n = 12$), did not report Pearson's r correlations between AAQ or AAQ-II and measures of anxiety ($n = 56$), described data that were previously published ($n = 3$), was in a language other than English and had no translation ($n = 12$), or was a commentary or review of another published article or book ($n = 18$). If correlational data were reported at baseline and at follow-up, only baseline data were included. In situations where a total score as well as subscales (e.g., PAS total and subscales) were reported, only the total score was included in this analysis. However, if the total score for the measure was not reported, subscales were used. Broader measures of functioning that include anxiety subscales (BSI, SCL-90, DASS) were reported only if they included the anxiety subscale. See Tables 1 and 2 for correlations as well as definitions of measures.

Effect sizes were calculated using Comprehensive Meta-Analysis (Borenstein & Rothstein, 1999) and, based on recommended procedures, Pearson r coefficients were transformed into Fisher's z scales for all analyses, and transformed back into Pearson r coefficients in reported results (Borenstein, Hedges, Higgins, & Rothstein, 2009). When a study reported multiple relevant correlations, effect sizes were aggregated into a mean score for that study.

[1] Complete measure names are provided in Table 2.