**A review of research on acceptance and commitment therapy for anxiety and obsessive compulsive and related disorders**

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**Key Points**

* Acceptance and commitment therapy (ACT) is a transdiagnostic intervention that has been applied across anxiety, obsessive-compulsive disorders (OCD), and obsessive-compulsive related disorders.
* Psychological inflexibility is positively related to worse anxiety, OCD, and OC-related disorders.
* Reviews of outcome research show that ACT is effective as a treatment for anxiety disorders, OCD, and trichotillomania.
* Preliminary research suggests ACT may be efficacious for excoriation disorder, hoarding, and body dysmorphic disorder (BDD).
* In general, psychological flexibility is the strongest process of change in ACT but psychological flexibility also predicts outcomes in other interventions.

**Synopsis**

This paper reviews acceptance and commitment therapy (ACT) for anxiety disorders, obsessive compulsive disorder (OCD), trichotillomania, excoriation disorder, hoarding, and body dysmorphic disorder (BDD). Measurement of psychological inflexibility and its relationship to pathology is reviewed. Outcome work in all disorders listed is reviewed with results supporting ACT for anxiety disorders, OCD, and trichotillomania, but there is limited evidence for excoriation disorder, hoarding, and BDD. Future research should focus on processes of change in addition to outcomes.

**Keywords**: acceptance and commitment therapy; psychological flexibility; anxiety, obsessive compulsive disorder, trichotillomania.

**Introduction**

Acceptance and commitment therapy (ACT) is a form of cognitive behavior therapy (CBT) that came out of behavior analysis and their work in language and cognition. ACT is a transdiagnostic treatment with work in many areas. Over time, international work has occurred in every anxiety disorder, mixed anxiety disorders, and obsessive compulsive and related disorders. 1 Researchers in this area have also built out the conceptual models for ACT across these disorders, developed disorder specific process of change measures, and studied change processes using these measures.

**Conceptual Foundations**

Functional contextualism provides the foundations for ACT theory, research, and practice.2 Truth is defined in functional contextualism in terms of successful working towards the scientifically agreed upon analytic goal of prediction *and* influence of behavior. This is considered one goal as both are deemed necessary in order to inform a science of behavior. Functional contextualism emphasizes the role of context in behavior as any effort aiming to influence behavior would be based on a change in context.3 The emphasis on successful working towards pre-specified goals and on understanding the contexts that govern behavior not only inform the theory used in ACT, but also the treatment approach directly. Examples include targeting the context in which one experiences anxious thoughts and feelings rather than their content, situating exposure in relation to success in working towards one’s chosen values, and an emphasis on the client’s experience of what works or not in terms of their goals and values.

ACT shares its functional contextual roots with behavior analysis, and principles derived from basic behavioral science serve as the building blocks for ACT. Anxiety disorders are conceptualized within a behavioral approach in which the behaviors of anxiety are understood in relation to antecedent and consequential variables that elicit and maintain them. Where ACT diverges from traditional behavior therapy approaches to anxiety is in how it applies relational frame theory (RFT) as a modern behavioral account of cognition4. From a RFT perspective, our ability to derive relations among stimuli, and to transform the functions of those stimuli through these relations, exponentially expand stimuli that elicit anxiety beyond one’s direct learning history. Importantly these relations can be arbitrarily applied, meaning almost anything can be related for example to an obsession, panic symptoms, concerns of social evaluation, and so on, which can help clarify the broad, entrenched, and sometimes unexpected ways that anxiety disorders manifest in patients’ lives. The result is that RFT includes an emphasis on understanding the role of context in how stimuli relate and transform each other, which in line with a functional contextual approach, also means that these contextual variables might be altered to influence behavior.

RFT highlights how the relations between stimuli could be altered by changing the relational context (e.g., “I need to not be anxious” might be altered through discussions and experiences relating anxiety to engaging in meaningful activities leading to an expanded set of relations “Being anxious is unpleasant at times, but part of living a meaningful life”). As particularly core to an ACT approach, RFT also highlights how the contexts governing the transformation of stimulus functions can be altered. For example, “I need to not be anxious” could increase anxiety when noticing one’s hand shake and lead to leaving a grocery store if it’s responded to in a literal context such that the thought is true. However, “my mind is telling me I need to not be anxious” or “how many times have I told myself I need to not be anxious” or “is it useful to focus on the thought ‘I need to not be anxious’” could all change the context of this thought such that it loses these literal anxiety eliciting functions in the moment. These basic foundations directly inform the theoretical model in ACT for anxiety disorders and their treatment.

**The Psychological Flexibility Model**

One major focus in ACT is on how cognition can alter behavioral processes in ways that lead to maladaptive or adaptive patterns of behavior. Psychological inflexibility refers to when behavior is rigidly governed by one’s internal experiences (e.g., anxiety, intrusive thoughts, anxious sensations) rather than direct contingencies (what is effective) or personal values (what is meaningful). A key component of psychological inflexibility is cognitive fusion, when the literal functions of thoughts are dominant, such that thoughts are responded to as if they are true and essential to act on (e.g., “If I do x, I’ll be too anxious” so I stay home). This can further drive experiential avoidance as the other key component of psychological inflexibility, in which one overly focuses on avoiding or otherwise altering internal experiences (e.g., anxious sensations, intrusive thoughts), even if it has harmful consequences.

ACT aims to reduce psychological inflexibility through psychological flexibility processes targeted in treatment. Psychological flexibility refers to the capacity to engage in meaningful patterns of activity, while being mindful and accepting of whatever internal experiences arise. This includes altering the context in which internal experiences arise, such that one relates to them in a defused (i.e., noticing thoughts as thoughts) and accepting manner (i.e., compassionately welcoming or making space for whatever internal experiences are present). Psychological flexibility also involves leveraging adaptive functions of cognition, such as developing a more flexible, stable sense of self (i.e., self-as-context), attending to experiences in the present moment (i.e., present moment attention), commitment to sustain and expand meaningful patterns of behavior (i.e., committed action), and clarifying and connecting with personal sense of meaning and intrinsic motivation with one’s actions (i.e., values). Altogether, these sub-processes of psychological flexibility form the components of ACT protocols.

**Measurement of Psychological Flexibility**

Psychological flexibility is most commonly measured using the acceptance and action questionnaire-II (AAQ-II).5 However, the measure and measurement of psychological flexibility generally has received criticism with respect to problems with specificity of measurement and strong correlation with measures of negative affect.6 Additionally, general measures of psychological flexibility, like the AAQ-II, may not actually capture psychological flexibility within the context of the distressing symptoms a person is experiencing.7 Symptom or context specific measures of psychological flexibility have been developed and better captures changes in psychological flexibility rather than changes in distress.7 The limitations of the AAQ-II and measures of psychological flexibility broadly, suggest that when available, symptom specific measures should be used. Currently, there are 37 symptom or context-specific variants of the AAQ including, OCD, hoarding, trichotillomania, and social anxiety.

**Anxiety and psychological inflexibility**

The role of psychological inflexibility in psychopathology has been explored across diagnoses and symptom clusters. In a recent meta-analysis of psychological inflexibility across a variety of diagnoses, anxiety symptoms had a large effect size (*r=* 0.50), social anxiety disorder had a medium to large effect size (*r*= 0.46), generalized anxiety disorder (GAD) had a large effect size (*r=* 0.58), panic and agoraphobia had a small to medium effect size (*r=* 0.34), specific phobia had a medium to large effect size (*r=*0.42), worry had a large effect size (*r=* 0.51), and OCD and related disorders had a medium to large effect size (*r=* 0.40).8 The findings in OCD and related disorders were replicated and extended in a study that included 36 papers that collected data on the relationship between measures of psychological inflexibility and OCD, trichotillomania, hoarding, body dysmorphic disorder (BDD).9 The effect size between OCD and psychological inflexibility was moderate to strong with a standardized mean difference (SMD) of .75, it was moderate for trichotillomania with a SMD of .56, for hoarding it was large with a SMD of .93, and for BDD it was large with a SMD of 1.55. The review also found that disorder specific measures of psychological inflexibility showed stronger relations to symptoms than the general measures, a result found by other researchers in this area. 7

**ACT is transdiagnostic, but targeted manuals exist**

ACT is a process-based intervention, but in the same way that measures of psychological flexibility vary by disorder, ACT for each anxiety, OCD, and OC-related disorders have some specific techniques and processes of change that are emphasized. First, each disorder discussed in this section has a different key inner experience that would largely be targeted in ACT: obsessions for OCD, worry for GAD, strong physiological sensations for panic disorder, urges to pull in trichotillomania, and so on. Key ACT processes need to be adjusted, and increased or decreased, for how they are applied to each of these inner experiences. Of the six ACT processes, acceptance is a key process in the treatment of all clinical issues because emotional avoidance is a key feature in all anxiety and OCD disorders. In disorders such as OCD and panic disorders, acceptance will take less time clinically as clients appear to grasp that attempts to control anxiety backfire, whereas the paradoxical effects of emotional control appear less clear in disorders such as hoarding and trichotillomania. However, low motivation and lack of values clarity are more central in trichotillomania10 and hoarding than in OCD where the clients’ values are central to their obsessions. Finally, processes like self as context can be more of a key target in GAD and clinical perfectionism. All case conceptualizations will vary by client, but educated assumptions can occur when designing manuals for each problem area.

Similarly, additional technique adjustments need to occur when best applying ACT to each of these disorders. For example, in GAD, trichotillomania, and hoarding, acceptance and defusion would focus on both the appetitive (feeling of doing something perfectly, joy of pulling, and saving) and aversive (guilt and frustration) processes involved in each of these disorders, whereas appetitive inner experiences are not clear in panic disorder or OCD.

Finally, the behavioral commitment phase of ACT is key in the treatment of these disorders, and this is where ACT’s behavioral roots are apparent. Acceptance, defusion, being present, and seeing self-evaluations as just evaluations, are generally aimed at decreasing the regulatory function of inner experiences so that environmental contingencies can more effectively shape behavior. Values strengthen adaptive behavior. Behavioral commitments are behavior changes that will move people towards more adaptive behaviors that are consistent with their values. For trichotillomania and excoriation disorder, this would include habit reversal, contingency management, and gradual commitments to reduce pulling and picking. For hoarding, this can include decreasing acquiring and spending time discarding. For many of the anxiety disorders, this will involve practicing ACT processes in contexts that the person has often avoided, but engaging in the context would be values consistent. This is a form of exposure therapy, but with specific functions and parameters. As written in the first book on ACT “During the latter portions of this phase, ACT takes on the character of traditional behavior therapy, and virtually any behavior change technique is acceptable. …Behavior change is a kind of willingness exercise, linked to chosen values." 11

**Some thoughts on exposure therapy and ACT**

Exposure with response prevention (ERP) is the most empirically supported treatment for anxiety and OCD, but the particular mechanism of action behind ERP is not agreed upon in our field. As described by other authors12, ACT has a particular view on exposure therapy. In ACT, we see the goal of exposure therapy to be learning how to effectively follow one’s values while anxiety or obsessions are present, or said another way, to develop a new relationship with one’s inner experiences and the ability behave consistent with one’s values. There is not a goal or expectation of a change to the form, frequency, or situational sensitivity of the anxiety or obsession; ACT focuses on one’s ability to interact with these inner experiences.

In ACT we focus on building psychological flexibility over facilitating other processes of change such as cognitive change (i.e., seeing things differently or more accurately) or reductions in inner experiences as might be seen in a habituation model. Therefore, the therapist pays close attention to behaviors and statements that suggest levels of psychological flexibility. Finally, therapy sessions where ACT-based exposure therapy occurs will have their own style. Of note, the exposure exercises will focus on teaching psychological flexibility so the initial conversational/didactic phase of therapy will teach those skills. During exposures, the therapist will focus on building psychological flexibility through prompts, guidance, and exercises. The choices of exposures will tie more into the client’s values and skill level than the amount of distress that the exercise will produce. Each exposure exercise will be tied to some value (directly if possible) and the focus during the exercise will be on building psychological flexibility so that the client builds the needed skills when in similar situations outside of therapy.

We should be cautious and curious whether this conceptualization does anything important for our field or just adds another level of complexity. First, recent reviews suggest that CBT-based exposure for anxiety and OCD are effective for about half of those who receive it13 meaning there is a need for innovation. To date, there have been only a handful of large RCTs comparing ACT-based exposure to CBT-based exposure. 14 In general, the results are comparative in terms of outcomes. As will be reviewed in the “Evidence for time-based process of change” section, process of change analyses generally point to moderate differences between interventions, and moderator analyses suggest that there are some individual level differences in who responds best to each treatment. Obviously more work in this area needs to occur, but patterns are suggesting that there is some clinical utility to ACT-based exposures for anxiety disorders and OCD. It should be noted that ACT without any exposure exercises has been found to be effective for OCD and anxiety issues 15 16, but the bulk or research suggests to incorporate ACT-based exposure exercises into treatment if using ACT for anxiety or OCD.

**ACT for Anxiety Disorders**

In a review of 14 meta-analyses and 11 systematic reviews of ACT for anxiety and depression, Beygi and colleagues17 found that ACT had greater improvements in anxiety symptoms compared to active controls, with the exception of CBT, where no difference was found for anxiety outcomes. ACT also resulted in greater improvements in anxiety symptoms compared to non-active controls (e.g., waitlist)17. In another review of meta-analyses for ACT across diagnoses, seven meta-analyses for anxiety disorders were reviewed.1 Six of the meta-analyses had small to medium effect sizes (*g=* 0.18-0.57) supporting ACT over comparison conditions. One meta-analysis found no difference between ACT and comparison conditions (*g= -*0.04).1

Digging deeper into each anxiety disorder, a scoping review of 11 RCTs of ACT treatments for social anxiety was conducted.18 Seven RCTs compared ACT to CBT and no differences in outcomes were found. ACT was more effective than non-active controls. Finally, ACT improved social anxiety symptoms through improving key components of social anxiety (e.g., attentional bias, avoidance). While no recent reviews or meta-analyses of ACT for GAD exist, review of the current repository for RCTs (contextualscience.org) show 10 RCTs on ACT for GAD. Across these trials, ACT was superior to waitlist19 but not other empirically supported treatments.20 In addition to in person trials, it was supported in bibliotherapy21 and web-based interventions.19 Excluding mixed and open trials, the data on ACT for panic disorder are limited to one unique RCT that randomized 43 non-responders to CBT to ACT or waitlist.22 Individuals in the ACT condition significantly improved on clinical severity ratings and assessments of panic disorder over the control condition (d=.89 and .72, respectively). Taken together, there is a notable amount of data on ACT for GAD and social anxiety disorder, and limited data on ACT for panic disorder.

**ACT for OCD and related disorders**

One of the more developed areas of ACT research is in the treatment of OCD and related issues, particularly trichotillomania. While there have only been a couple RCTs of ACT or ACT plus exposure exercises for OCD conducted in North America16,23, 18 RCTS of ACT for OCD have been conducted in Iran.24 While these trials vary in quality, across all 18 trials, a pattern of findings is evident. ACT protocols with and without exposure exercises demonstrated similar effectiveness when compared to ERP and traditional CBT protocols.8 A recent meta-analysis comparing ACT for OCD against control conditions indicated a Standardized Mean Difference (SMD) of -1.19 in favor of ACT, although the quality of these studies also had significant variability.25

Of the OCD related disorders, the most work has occurred in ACT-enhanced behavior therapy (A-EBT) for trichotillomania, which is ACT plus contingency management procedures and habit reversal.26 Currently, there have been six RCTs on A-EBT for trichotillomania along with a few open trials and single subject designs.27 A-EBT has demonstrated effectiveness in face-to-face sessions, telehealth setups, and through asynchronous web-based programs.28 In the largest trial conducted to date (N=78), A-EBT outperformed supportive psychotherapy, showing 48% responder status in ACT compared to 28% in the active control condition.29

The support for ACT for excoriation disorder is limited to a couple single subject designs and one mixed trichotillomania and skin picking trial.27 Similarly, the studies on ACT as a treatment for hoarding are preliminary, with support in a single subject design as well a waitlist-controlled RCT evaluating an asynchronous web-based intervention28,30. Finally, there is limited, preliminary outcome data for BDD.31 While the data in these areas arelimited, when compiled with the other data on OCD and trichotillomania, ACT and ACT plus behavioral interventions is a notable line of work.

**Anxiety symptoms in non-anxiety disorder populations**

A number of studies have examined the effects of ACT on general anxiety symptomatology in broader populations outside of targeted anxiety disorders. A meta-analysis of 28 RCTs that measured improvements in anxiety symptoms across a range of populations found a significant small effect size favoring ACT to waitlist and active control conditions (*d* = .45).32 Another meta-analysis on ACT delivered in group therapy formats, for a wide range of populations, found a significant medium effect size on anxiety symptoms across 34 RCTs (*g* = .52).33 These effects on anxiety appeared to be driven by comparisons to non-active controls (*g* = .70), with a non-significant small effect for ACT group therapy relative to active controls (*g* = .17).33 ACT also appears effective for targeting anxiety symptoms in general when delivered in self-guided websites and mobile apps. A meta-analysis of ACT delivered in a digital self-help format for a variety of populations found a significant small effect size favoring ACT to waitlist (17 RCTs, *g* = .30), although the effect was non-significant relative to active comparison groups (8 RCTs, *g*  = .21).34

ACT has been found to reduce anxiety symptoms in chronic health conditions in several studies. A meta-analysis of ACT for chronic health conditions broadly found a significant large effect size for ACT relative to a variety of control conditions in 10 RCTs on anxiety symptoms (SMD = 1.20).35 Other meta-analyses have found significant effects favoring ACT to control conditions on anxiety symptoms among individuals with neurological disorders (11 RCTs, SMD = .74)36 and with cancer (6 RCTs, SMD = 1.22).37

Preliminary results also indicate ACT is effective for reducing anxiety symptoms in general among children and adolescents. A meta-analysis of RCTs evaluating ACT with children and adolescents found a significant small effect relative to treatment as usual and waitlist controls (SMD = .31), with equivalent effects in the two RCTs comparing ACT to traditional CBT.38

**Evidence for processes of change**

In general, changes in psychological inflexibility are a strong predictor of outcomes across ACT, and at times, CBT trials.39 Process of change work in anxiety disorders is not synthesized so a few large and well-conducted RCTs that analyzed mediation and moderations will be reviewed. Arch et al40 compared ACT (including exposure) to traditional CBT for mixed anxiety disorders (including OCD) in adults (N=128). Researchers found that ACT and CBT had non-different clinical severity ratings at posttreatment. At follow-up timepoints, clinical severity ratings favored ACT over CBT, but CBT showed a greater response on measures of quality of life.14 Moderator analyses of these outcomes showed those with moderate levels of anxiety sensitivity improved more in CBT and that those with comorbid conditions improved more in ACT.41 Arch also found there were shared mediators of outcomes, but that defusion was only a mediator for ACT and not CBT.41

In a similarly designed study, Craske et al.42 compared ACT with exposure therapy to CBT and a waitlist condition for social anxiety disorder in adults (N=87). ACT and CBT did not perform differently, but both improved more than the waitlist. Lower psychological flexibility at pretreatment predicted improvement in CBT but not ACT, a finding that also occurred in Arch et al. (2012). Mediator analyses found that psychological flexibility predicted changes in social anxiety in ACT but not CBT, while cognitive change predicted outcomes in both conditions. 43

ACT plus ERP was compared to ERP alone in 58 adults with OCD in a multisite RCT.23 There were no differences in conditions, and both had high response rates at posttreatment and follow-up. Similarly, there were no group differences on measures of psychological flexibility or cognitive distortions. Moderator analyses showed that ERP was more effective than ACT with participants with less dysfunctional appraisals at pretreatment. OCD symptom severity predicted dysfunctional appraisals more in ERP than in ACT+ERP, indicating stronger decoupling in ACT.44 A separate process of change analysis showed that intrusions decreased in both conditions and across subtypes of OCD, but that “control of thoughts” subtype decreased more in ACT.45

In the largest trichotillomania trial to date it was found that A-EBT outperformed psychoeducation plus supportive psychotherapy at posttreatment for 81 adults. 29In the only study reviewed thus far that used a disorder specific version of the acceptance and action questionnaire, it was found that lower psychological flexibility scores predicted better outcomes in A-EBT than psychoeducation plus supportive psychotherapy.46 Also, changes in psychological flexibility mediated outcomes for A-EBT, but not the control condition.

**Psychological Inflexibility as a process of change across treatment approaches**

Decreasing psychological inflexibility, or increasing psychological flexibility, is a key target in ACT, but research shows that, at times, psychological flexibility can be a process relevant across treatment approaches.39 In a study conducted at a residential OCD treatment center, individuals with higher psychological acceptance during exposure exercises showed greater reductions than those with low psychological acceptance, even when controlling for other aspects of treatment, such as time in treatment, medication management, treatment adherence, ability to engage in ritual preventions, and depression.47 A similar finding occurred when videos of 271 therapy sessions from adults receiving ACT+ERP or ERP alone (participants were combined in these analyses) for OCD were coded and then analyzed.44 It found that the strongest predictor of improvements in OCD, increases in psychological flexibility, and homework completion, was a strong experiential description of acceptance/tolerance the previous session, even beyond time spent doing exposure work.

**Conclusion and future directions**

In general, ACT is a well-established treatment that has been shown to be effective for a variety of conditions, including GAD, social anxiety disorder, OCD, and OC-related disorders.1 Across all the areas described in this article, ACT is the most supported in OCD and trichotillomania. For example, there are approximately 20 RCTs of ACT for OCD with the bulk of them being conducted in Iran. Probably the largest limitation is the relatively low rigor of most of these RCTs. Nevertheless, when considering the more well-controlled RCTs16,23, combined with the many single-subject designs in this area, we have good evidence that ACT is a useful clinical tool for OCD. The work in trichotillomania is similar to the work in OCD. There have been six RCTs for trichotillomania of varying size and quality and many open trials and single subject designs. Overall, the results are strong and suggest A-EBT is a first line treatment for trichotillomania. When combining the mixed and anxiety trials with the work for each anxiety disorder, there is also data to support using ACT plus exposure exercises for all anxiety issues.

At an empirical end, questions still exist on ACT’s effectiveness across these disorders, especially as it concerns certain groups, age ranges, and maintenance of gains. We are also still unclear how much time is needed to teach these skills for these disorders, and what methods are needed to teach these skills (e.g., how much could be taught with technology). As CBT in general moves in a more “process-based” direction, ACT as a package may play less of a role in our conceptualizations, but concepts such as psychological acceptance, defusion, and values to increase motivation will likely play notable roles in our work. Thus, future work should focus more on ACT processes in the treatment of anxiety, OCD, and related disorders in addition to testing the entire package.

In conclusion, ACT has a strong philosophical and theoretical foundation and ties with behavior analysis. The ACT model and targeted constructs are well-researched. Psychological inflexibility appears to be related to and predictive of anxiety, OCD, and related disorders. ACT has been researched for anxiety, OCD, and related disorders for over 20 years by many research groups and there is a sizable body of literature for most of these disorders. Additionally, it appears that psychological inflexibility is a key process of change in ACT and maybe other interventions. While all this work is supportive of ACT as a treatment, continued work in all these areas is needed.

Clinical Care Points

* There are other empirically supported interventions for anxiety, OCD, and OC related disorders. ACT may be especially indicated when psychological inflexibility is a large part of the disorder or other methods are a poor match.
* Consider incorporating individual ACT processes into your empirically supported work. For example, if motivation is low add a focus on values. If a client has an intractable difficult thought add in defusion.
* Psychological flexibility can be taught in many ways so consider incorporating adjunctive methods into your work such as bibliotherapy or asynchronous digital programs.

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