

Increasing Willingness to Experience Obsessions: Acceptance and Commitment Therapy as a Treatment for Obsessive-Compulsive Disorder

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This study evaluated the effectiveness of an 8-session Acceptance and Commitment Therapy for OCD intervention in a nonconcurrent multiple-baseline, across-participants design. Results on self-reported compulsions showed that the intervention produced clinically significant reductions in compulsions by the end of treatment for all participants, with results maintained at 3-month follow-up. Self-monitoring was supported with similar decreases in scores on standardized measures of OCD. Positive changes in anxiety and depression were found for all participants as well as expected process changes in the form of decreased experiential avoidance, believability of obsessions, and need to respond to obsessions. All participants found the treatment to be highly acceptable. Implications and future directions are discussed.

OBSESSIVE-COMPULSIVE DISORDER (OCD) has been cited as one of the most common and debilitating psychological disorders; it is the fourth most common psychological disorder following phobias, substance abuse, and depression; the lifetime prevalence rate for OCD is estimated to be 2.6% (Rasmussen & Eisen, 1992). Current state-of-the-art psychological treatments for OCD provide promise for those with the disorder, with effective-

ness rates for exposure with ritual prevention (ERP) ranging from 60% to 85% (Abramowitz, 1997), but the treatment is not without its limitations. In addition to the 40–15% of individuals who do not respond to ERP, approximately 25% of individuals will refuse ERP and another 3% to 12% will drop out of treatment (Foa, Steketee, Grayson, & Doppelt, 1983). Although treatment acceptability is not typically formally measured in ERP, poor motivation and compliance on the part of the client is problematic in ERP and has been associated with poor outcomes (Foa, Franklin, & Kozak, 1998a). Additionally, certain types of compulsions have been found to be particularly difficult to treat with ERP, including covert compulsions (Salkovskis & Westbrook, 1989) and hoarding (Clark, 2004).

Partially in response to these limitations, cognitive theories of OCD have increased in popularity (e.g., Salkovskis, 1985; Rachman, 1997, 1998). Unfortunately, while there is wide agreement that a cognitive dimension is heavily involved in OCD, cognitive interventions so far are no more effective than ERP, either alone (Abramowitz, 1997) or in combination with ERP (Franklin & Foa, 2002). One study did find that ERP plus cognitive therapy had significantly lower dropout than a group that received ERP plus relaxation training (Vogel, Stiles, & Gotestam, 2004), but these findings were not supported in other studies (e.g., Cottraux et al., 2001).

So far, however, the approach to emotion and cognition in OCD, both in the case of cognitive approaches and ERP, has been directed at changes in the form or frequency of these events. Foa and Franklin (2001) characterize their treatment clearly in this way: “This treatment is specifically aimed at

A copy of the complete treatment manual is available from the first author, Michael Twohig, and is posted on the ACT Web site: www.acceptanceandcommitmenttherapy.com.

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reducing a patient's obsessions and urges to ritualize" (p. 241). [Rachman \(1997\)](#) is similarly clear: "Obsessions are caused by catastrophic misinterpretations of the significance of one's intrusive thoughts (images, impulses). By deduction: (a) the obsession will persist for as long as the misinterpretations continue; and (b) the obsessions will diminish or disappear as a function of the weakening/elimination of the misinterpretations" (p. 793).

Alternatives to the idea that the content of thoughts, feelings, or bodily sensations must be altered or changed directly in order to produce clinical progress have recently emerged, however. Several new "third wave" behavioral and cognitive interventions ([Hayes, 2004](#)) primarily target the function of cognitions and emotions rather than their form, frequency, or situational sensitivity. Examples include Dialectical Behavior Therapy ([Linehan, 1993](#)), Integrative Behavioral Couples Therapy ([Jacobson & Christensen, 1996](#)), and Mindfulness-Based Cognitive Therapy ([Segal, Williams, & Teasdale, 2002](#)), among several others (e.g., [Kohlenberg & Tsai, 1991](#); [Marlatt, 2002](#); [Martell, Addis, & Jacobson, 2001](#); [McCullough, 2000](#); [Wells, 1994](#)).

Acceptance and Commitment Therapy (ACT; [Hayes, Strosahl, & Wilson, 1999](#)) is a third-wave behavior therapy that explicitly adopts this approach. ACT is rooted in the philosophical tradition of functional contextualism ([Hayes, Hayes, Reese, & Sarbin, 1993](#)), and is based on a program of basic research called Relational Frame Theory ([Hayes, Barnes-Holmes, & Roche, 2001](#)). One of the key processes underlying ACT is "cognitive defusion" which involves arranging verbal contexts so as to decrease the believability of one's thoughts (e.g., [Masuda, Hayes, Sackett, & Twohig, 2004](#)) and reducing the tendency to respond in the presence of them (e.g., [Gutiérrez, Luciano, Rodríguez, & Fink, 2004](#)) while not necessarily decreasing their frequency or altering their form (e.g., [Bach & Hayes, 2002](#)). ACT interventions have been shown to significantly increase willingness to engage in difficult activities while experiencing difficult emotions ([Eifert & Heffner, 2003](#); [Levitt, Brown, Orsillo, & Barlow, 2004](#)), which lends itself to the challenge of change in OCD.

These features suggest that ACT might provide an effective way to deal with OCD that is both behavioral and cognitively focused. Particularly with OCD, acceptance and defusion may be useful. Individuals with OCD are focused to an unhealthy degree on their obsessive thoughts, and engage in a variety of escape and avoidance behaviors to alter their form or frequency ([American Psychiatric Association, 2000](#)). In the treatment of OCD,

ACT seeks to help the client create a new relationship with obsessive thoughts and anxious feelings: one in which the obsession can be experienced as just another thought and anxiety is simply an emotion to be felt. This, in turn, is designed to allow the individual to focus on doing things that are meaningful rather than spending large amounts of time trying to decrease the obsession or avoid anxious feelings.

While in-session exposure is typically done in ACT treatment for anxiety ([Eifert & Forsyth, 2005](#)) it is possible to conduct ACT without exposure. In-session exposure in ACT is used as a context in which to practice acceptance and defusion while engaging in valued activities. Thus, positive outcomes for ACT might be expected even without in-session exposure because these ACT processes are still addressed, just without the in-session practice. In-session exposure was not included in the current study in order to maximize the technological distinction between the present approach and more traditional methods.

ACT has been evaluated as a treatment for a variety of psychological disorders including psychosis, substance abuse, depression, social stigmatization (see [Hayes, Masuda, Bissett, Luoma, & Guerrero, 2004](#), for a recent review), as well as anxiety and stress (e.g., [Block, 2002](#); [Bond & Bunce, 2000](#); [Hayes, Bissett et al., 2004](#); [Levitt et al., 2004](#); [Zettle, 2003](#)), and there are uncontrolled case studies for ACT as a treatment for OCD ([Hayes, 1987](#)). Controlled single-case research has recently demonstrated the effectiveness of ACT for OCD spectrum disorders. ACT alone is helpful as a treatment for skin picking ([Twohig, Hayes, & Masuda, in press](#)) and trichotillomania when used in combination with Habit Reversal ([Twohig & Woods, 2004](#)). Process data in these latter two studies showed that both interventions caused expected decreases in experiential avoidance—the tendency to avoid or attempt to control private events even when doing so causes psychological harm ([Hayes, Wilson, Gifford, Follette, & Strosahl, 1996](#))—which is a key process targeted by ACT. Thus, while the literature is still very young, it seems theoretically and empirically plausible that an ACT approach to OCD could be useful. In this study, the effects of an eight-session ACT protocol without in-session exposure were evaluated in a nonconcurrent multiple baseline across four adults with OCD.

Method

PARTICIPANTS

Participants were recruited in three fashions: through postings on the local university campus,

orally in undergraduate psychology classes, and through advertisements in the local newspaper. All three recruitment procedures were brief and instructed interested participants to contact the first author for a more detailed description of the study. In total, five individuals responded and scheduled pretreatment sessions. One individual, for unknown reasons, never attended the pretreatment assessment session; thus, only four individuals enrolled in the study. Based on an unstructured clinical interview, all four individuals met criteria for OCD (as defined in the *DSM-IV-TR*; American Psychiatric Association, 2000), reported no recent initiations of any psychotropic medications (within previous 4 weeks), and planned no changes to the dosage of currently prescribed psychotropic medications. Assessments of comorbid psychological conditions were not formally conducted. Although of unknown quality, additional diagnoses participants had received from medical or psychological professionals are shown in Table 1.

The main obsession for Participant 1 involved checking for dropped items, particularly his keys, cellular phone, and wallet. He checked as he walked, he checked if he heard something that sounded like one of these items, and he checked if he was in a position—such as sitting in a chair—

where they could have fallen out of his pocket. Participant 2's obsession involved hoarding. He saved financial documents from work, his mail, and newspapers that he would stop and purchase. He recorded each new paper item that he brought home. Participant 3's compulsion involved cleaning her home and vehicle. The fourth participant checked to make sure her windows in her car and home were open exactly 1 inch. All participants were asked to record every time this particular behavior occurred regardless of whether it occurred in response to an obsession; thus, this recording method possibly included false positives. Other participant characteristics are provided in Table 1.

MEASURES

OCD assessment. Self-Monitoring (Twohig & Woods, 2004). Participants were given 3-x-5-inch note cards and asked to place a mark on the card each time they engaged in the compulsion as defined in the previous section. At the end of each day, the participants reported the number of compulsions to the experimenter via telephone to a message machine, ensuring roughly contemporaneous self-monitoring. These data served as the primary dependent variable and treatment decisions were made based on these data.

Obsessive Compulsive Inventory (OCI; Foa, Kozak, Salkovskis, Coles, & Amir, 1998b). The OCI is a 42-item measure of OCD features. Items are rated on a 0-to-4-point scale for frequency of the symptom and severity of the associated distress. The OCI is scored by summing the scores from the individual items for each subscale. Scores on each OCI subscale range from 0 to 168. The means for individuals diagnosed with OCD on the distress and frequency subscales are 66.3 ($SD = 31.9$) and 66.4 ($SD = 29.4$), respectively, and nonpatient controls on the same subscales have means of 25.3 ($SD = 20.9$) and 34.2 ($SD = 21.2$), respectively (Foa et al., 1998b). The OCI has high alpha coefficients for individuals with OCD (Cronbach's alpha = .92 for the distress rating and .93 for frequency rating), good test-retest reliability ($r = .87$ for distress and .84 for frequency), and showed good discriminative and convergent validity (Foa et al., 1998b).

Assessments of depression and anxiety. Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Steer, 1988). The BAI is a 21-question self-report measure that assesses anxiety. The BAI has high internal consistency (Cronbach's alpha < .90), adequate test-retest reliability ($r_s > .60$), and

Table 1
Participant characteristics

Participant	P1	P2	P3	P4
Gender	M	M	F	F
Marital status	S	D	S	D
Age	19	63	20	32
Years of education	14	15	15	14
Ethnicity	AA	C	C	C/H
Yrs. W/OCD	5	58	3	3
Compulsion	checking	hoarding	cleaning	checking windows
Previous OCD tx.	none	cog. therapy	none	none
Previous diagnoses	none	none	PD	ADHD PTSD Depression
Current meds	none	Paxil 25 mg	Paxil 25 mg Prozac 25 mg	Prozac

Note. Marital status: S = single, D = divorced; Years of education begin with first grade (e.g., 12 = high school education, 16 = 4 years of post-high-school education); Ethnicity: AA = African American, C = Caucasian, C/H = Caucasian and Hispanic; Previous diagnoses: PD = panic disorder, ADHD = attention-deficit/hyperactivity disorder, PTSD = posttraumatic stress disorder.

moderate to high convergent and discriminant validity.

Beck Depression Inventory–II (BDI-II; Beck, 1996). The BDI-II is a self-report measure that assesses the severity of depression. The BDI-II has shown good test-retest reliability ($r = .93$) and has demonstrated a high correlation with the original BDI ($r = .93$; Beck, 1996).

Process measures. Acceptance and Action Questionnaire (AAQ; Hayes, Strosahl et al., 2004).

The AAQ is a 9-item questionnaire that measures experiential avoidance. Questions are rated on a 7-point Likert-type scale. Lower scores reflect greater experiential willingness and ability to act in the presence of difficult thoughts and feelings. The AAQ has been found to be internally consistent and has good convergent and discriminant validity (Hayes, Strosahl et al., 2004).

Defusion Measure. An OCD-specific measure of cognitive defusion was crafted for this study following an approach that has been found to be useful in other ACT research (e.g., Bach & Hayes, 2002; Masuda et al., 2004). Participants were asked, “How believable are your obsessions?” and “How strongly do you feel that you must react to your obsessions?” and rated each on a 5-point Likert-type scale (1 = *not at all*, 3 = *neutral*, and 5 = *very much*).

Treatment Acceptability. Treatment Evaluation Inventory–Short Form (TEI-SF; Kelley, Heffer, Gresham, & Elliot, 1989). The TEI-SF measures the participant’s opinion of treatment. A modified version of the TEI-SF, which contained 7 questions instead of 9, was used in this study (also used by Twohig & Woods, 2004). The two questions that were removed concerned developmental disabilities and were considered not appropriate for this population. Each of the questions was rated on a 5-point Likert-type scale, with higher numbers reflecting greater acceptability. The values were summed and resulted in a treatment acceptability score for each participant. Scores over 21 indicate greater acceptability than unacceptability of the intervention. The original TEI-SF instrument has a reliable factor structure and is internally consistent, $\alpha = .85$.

PROCEDURE

During the initial assessment session, OCD was assessed using a clinical interview, and its severity was assessed using the OCI. Relevant demographic data were collected, and participants completed questionnaire measures. Finally, participants were given index cards on which to self-monitor the number of compulsions per day, throughout the course of the study. The intervention was evaluated

via a nonconcurrent, multiple-baseline, across-participants design.¹

Treatment consisted of eight, weekly, 1-hour sessions of ACT (Hayes et al., 1999) for OCD. The first author served as the therapist for all participants. The second author, a developer of the treatment, trained the first author. All sessions were videotaped, and 25% (one randomly selected tape of each session) were scored for treatment integrity by the third author.

Treatment Integrity. The tapes were scored for the quantity and quality of the coverage of each component of ACT using a validated and reliable scoring system previously used in ACT research (Pierson, Bunting, Smith, Gifford, & Hayes, 2004). Scores of 1 indicate the variable was never explicitly covered, scores of 2 indicate the variable occurred at least once and not in an in-depth manner, scores of 3 indicate the variable occurred several times and was covered at least once in a moderately in-depth manner, scores of 4 indicate the variable occurred with relatively high frequency and was addressed in a moderately in-depth manner, scores of 5 indicate the variable occurred with high frequency and was covered in a very in-depth manner. Every ACT component was covered to the highest extent during at least one session, except for committed action, which was covered in an in-depth manner several times. Means for each component over the eight sessions are as follows: creative hopelessness/workability received = 3.3 ($SD = 1.7$), willingness/acceptance = 2.8 ($SD = 1.2$), defusion = 2.5 ($SD = 1.3$), values = 2.4 ($SD = 1.7$), committed action = 1.8 ($SD = .9$), and general assessment of participant’s functioning = 3.1 ($SD = .8$). The therapist’s overall adherence to the manual and overall competence were rated very highly, $M_s = 4.9$ ($SD = .4$) and 4.4 ($SD = .5$), respectively. In

¹A multiple baseline is a series of coordinated simple phase change designs (Hayes, Barlow, & Nelson-Gray, 1999). In these replicated phase change designs, the changes occur at different real times and after different initial phase lengths, timed so that behavior changes are seen in interrupted phase changes before the intervention is applied to uninterrupted first phases. This design controls for the weaknesses in simple phase changes by controlling for extraneous variables that occurred at the same time as the independent variable in addition to variables that could be associated with the length of baseline such as maturation, effects from repeated measures, and observer drift. In this investigation, all participants were informed of the research design that was being utilized and that they would need to monitor during baseline for between 1 and 24 weeks and that they would be contacted when it was time to schedule the initial sessions. Participants were not informed of the exact amount of time that they would be in baseline. Participant 1 started treatment after 1 week of monitoring. For the other participants, treatment began after the previous participant showed decreases in compulsions during the treatment phase.

addition, the sessions were scored for therapeutic practices that were inconsistent with ACT, including challenging cognitive content, promoting change strategies that involved avoidance of the obsession, indicating that thoughts or feelings cause overt behavior, and use of cognitive therapy rationales. Because the protocol was deliberately designed with no in-session exposure in order to increase the discriminability of ACT and ERP, for the purposes of this study the use of in-session exposure was also considered inconsistent with the protocol. All ACT-inconsistent measures received scores of 1, indicating they were not observed.

ACT for OCD. All sessions followed the same pattern: events since the last session and homework were reviewed, the material from the previous session was reviewed and new material was presented, and new homework was assigned and behavioral commitment exercises were agreed upon. Behavioral commitment exercises involved commitments to engage in values-guided behavior instead of behavior guided by attempts to control one's private events. Examples of behavioral commitments included not engaging in compulsions while on campus, removing a vehicle filled with saved items, and spending 2 hours at the park with one's family. These behavioral commitments were to specific activities for specified periods of time, without regard to one's obsessions or anxiety. No comments or suggestions were made that these activities would result in decreases in obsessions or anxiety: instead, they were presented as contexts in which to practice other ACT techniques (e.g., acceptance, defusion, values). For example, Participant 2's partner had been expressing dissatisfaction over the amount of material he had stored in their home and rented storage units. Thus, one of his behavioral commitments often involved removing a specified amount of material from one of these locations while permitting himself to feel anxious in the service of his relationship.

Treatment began by collecting pertinent information on the participant's obsessions and compulsions, introducing the treatment, and forming a verbal contract for the eight sessions. ACT for OCD formally began by distinguishing the difference between the obsession and the compulsion. The participant was shown how one could occur without the other, but that in the participant's life they usually occurred together. Next, the participant was asked what he or she has been trying to do to decrease the obsession, what has worked, and what has not. This illustrated that the only way to get rid of the obsession was to engage in the compulsion, but that only worked for brief periods of time. The "Person in the Hole" metaphor (Hayes

et al., 1999, p. 101) was used to demonstrate the ultimate ineffectiveness of attempts to control the obsession. The metaphor described the participant falling into a hole (which represents the obsession) with only a shovel to get out (tool for reducing the obsession). The metaphor went on to describe how the participant's attempts to dig himself out of the hole (representing attempts to reduce or control the obsession) never got him out of the hole and actually made the hole seem larger (the paradox of how struggling with one's obsessions can make them larger and more difficult to handle). The intended function of the metaphor was to reduce the participant's focus on reducing the obsession and become aware of the difficulty of controlling it.

Sessions 3 and 4 generally focused on illustrating how attempts to control the obsession might be the problem rather than the solution. This involved exercises aimed at illustrating the limitations of control when aimed at private events, such as trying not think of something, such as "chocolate cake" (Hayes et al., 1999, p. 124) or to not get nervous when hooked to a polygraph machine (Hayes et al., 1999, p. 123). These exercises were designed to help the participant experience the difference between an obsession (an uncontrollable private event) and a compulsion (a controllable public event), hopefully shifting the focus from decreasing the obsession to decreasing the compulsion. The "Two Scales" metaphor (Hayes et al., 1999, p.133) was discussed to illustrate the possible benefits of acceptance of the obsession and other private events such as anxiety over attempting to control them. The "Two Scales" metaphor involved shifting the participant's attention from decreasing undesired private events such as the obsession, to increasing willingness to experience them. The participant was taught that being willing would not necessarily decrease the obsession, but that being unwilling certainly increases it. Therefore, being willing will allow the obsession and feelings of anxiety to do what they do, whereas attempts to control the obsession can have paradoxical affects and increase its frequency, intensity, and the obsession's capacity to control behavior.

Sessions 5 and 6 focused on changing the psychological function of the obsession from something threatening to just another verbal event. This involved defusion exercises, contact with the present moment or mindfulness exercises, and self as context work. Examples of defusion exercises involve rapidly repeating the obsession until it no longer sounds like the obsession, but rather a funny string of sounds (Masuda et al., 2004). Another example involved treating the obsessions as passengers on a bus in which the participant is the bus

driver. This metaphor illustrates that the passengers have had control of the bus (the participant responding to his or her obsessions) rather than the driver, and offers control of the bus back to the driver. The participant is told that the passengers will probably get upset (the obsessions will feel more intense), but the participant will gain control of the bus (Hayes et al., 1999, p. 157).

Contact with the present moment involved helping the participant observe the world as it is experienced more directly, rather than the world as constructed by our linguistic practice. This process is similar to and contains many of the same principles as several other meditation and acceptance-based approaches, including mindfulness-based therapies. Contact with the present moment was fostered by particular experiential exercises. For example, the “Soldiers in the Parade” exercise (Hayes et al., 1999, p. 158) involves contacting one’s private events in the present moment without holding onto any one thought or feeling—just observing what occurs.

Self-as-context work assists the participant in experiencing his or her thoughts as events that the participant sometimes has and sometimes does not. They are experiences that are felt, not identifying characteristics. Using the metaphor of the chessboard (Hayes et al., 1999, p. 190), in which the participant is described as the chessboard and the pieces are the obsessions, helps the participant see that the obsession could exist without damage occurring to the participant—just as the chessboard can exist without being damaged by the pieces.

The final two sessions, sessions 7 and 8, involved discussions of the participant’s values and increased behavioral commitments to follow those values. Values assessments involved completing the Valued Living Questionnaire (Hayes et al., 1999, p. 224). The questionnaire assessed the participant’s values in different areas, including family, occupation, and recreation. The participant was then asked to rate the importance of each area and to rate his or her success in pursuing those values. Often, engaging in the obsession was a large factor in keeping the participant from living in accordance with his or her values. Based on the responses to these questions, the participants were given the opportunity to make larger behavioral commitments that involved following one’s values and demonstrating an increased willingness to experience the obsession.

One week after treatment was completed, the participants were asked to discontinue self-monitoring and return to the clinic for the posttreatment assessment, which involved completing the AAQ, BAI, BDI-II, OCI, and TEI-SF. At 3 months post-

treatment, participants were asked to self-monitor for two additional concurrent days and to complete the same assessments completed at posttreatment (with the exception of the TEI-SF).

Results

COMPULSION FREQUENCY

Self-monitoring data for all participants on the primary measure are presented in Figure 1. None of the participants showed decreases in self-reported compulsions during a 1- to 7-week baseline. All showed very large reductions during treatment and retention of most or all of the gains during follow-up. Data were collected throughout, but posttreatment is considered data collected after the eighth (i.e., the final) session.

Participant 1. Pretreatment level for Participant 1’s checking compulsion was $M = 61.9$ ($SD = 14.8$). His compulsions showed an immediate reduction upon implementation of the intervention and continued to decrease until the final sessions (posttreatment: $M = 4.4$, $SD = 2.1$). Significant reductions from baseline were still evident at 3-month follow-up ($M = 11$, $SD = 1.4$).

Participant 2. Participant 2’s baseline level of hoarding was $M = 18.31$ ($SD = 5.1$). He showed a significant reduction in hoarding after session 2 and continued to decrease throughout treatment (posttreatment $M = 3.7$, $SD = .5$). These results were maintained at follow-up ($M = 2.5$, $SD = .7$). This participant also reported removing approximately 10 truckloads of paper material from his home and storage units throughout the course of the study.

Participant 3. Participant 3 engaged in her cleaning compulsion 16.9 times per day on average ($SD = 5.1$) throughout baseline. The rates of her compulsion steadily decreased throughout treatment and reached near zero levels by posttreatment (posttreatment: $M = .3$, $SD = .8$). These results were maintained at follow-up ($M = 1$, $SD = 1.4$).

Participant 4. Participant 4’s baseline mean was 40.6 ($SD = 11.2$). She showed a steady decrease in her checking compulsion and was able to reach zero levels by the sixth session (posttreatment: $M = .1$, $SD = .4$). These results were maintained at follow-up ($M = 2.5$, $SD = .7$).

OCD MEASURE SUMMARY

Table 2 shows the specific scores for all participants on the OCI and on all other self-report instruments, including the BAI, BDI-II, AAQ, treatment process, and treatment acceptability measures. Clinically significant improvements in OCD as measured by the OCI were found. Averaging across the two subscales, the OCI improved 68% from pre- to

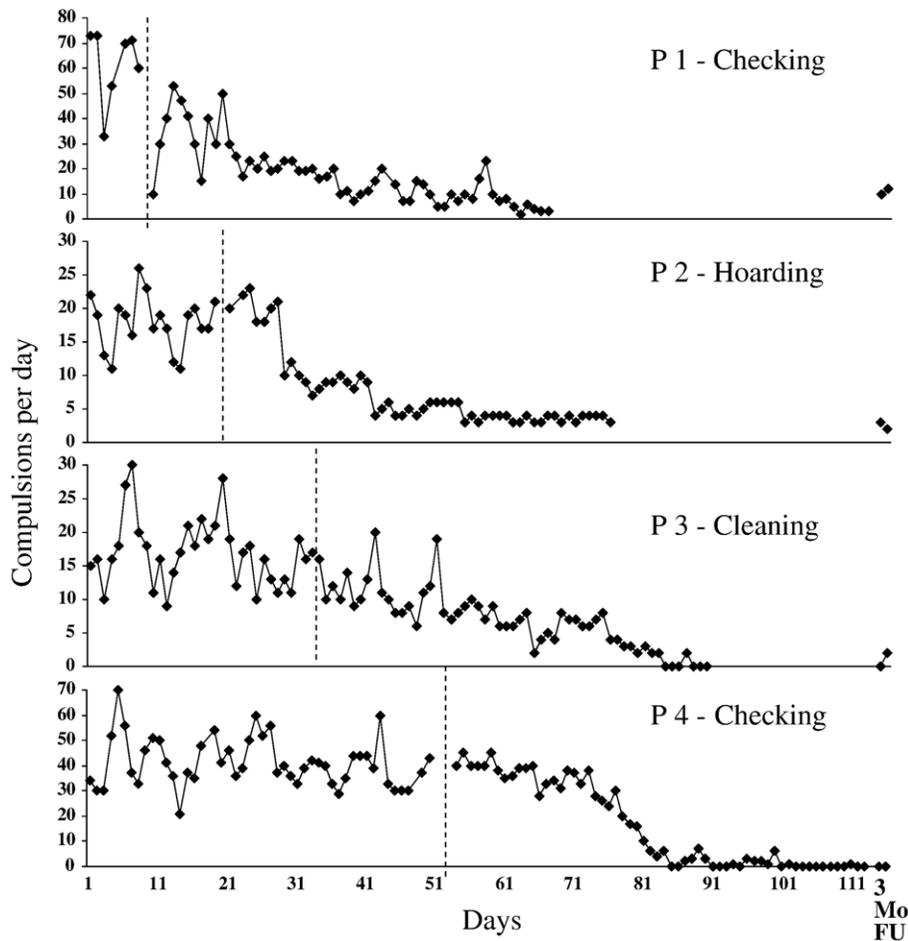


FIGURE 1 Daily frequency of compulsions for the four participants in baseline, treatment, and follow-up phases.

posttreatment and improved further to 81% from pretreatment to follow-up. At pretreatment all participants were within one standard deviation of the clinical mean on both subscales of the OCI and three of the four participants were at or above the OCD clinical mean for either distress or frequency (Foa et al., 1998b). At posttreatment

and at follow-up all participants were below the nonclinical means on both subscales (see Measures section for the clinical and nonclinical means).

Anxiety and depression. All participants completed the BAI and BDI-II at pretreatment, posttreatment, and follow-up. All participants showed reductions on both measures from pretreatment to

Table 2
OCD, anxiety, depression, treatment acceptability, and process measures scores for pretreatment, posttreatment, and 3-month follow-up

	P1			P2			P3			P4		
	Pre	Post	FU									
OCI												
Freq.	61	14	5	36	27	16	74	16	11	60	30	28
Dis.	69	11	2	38	33	7	64	0	5	66	19	17
BAI	33	6	2	11	9	4	10	2	2	22	9	6
BDI-II	28	7	2	15	9	0	9	1	0	16	5	3
TEI-SF		31			29			29			34	
Believable	3	2	1	5	2	2	4	2	2	1	2	1
React	3	2	1	5	2	2	5	2	1	5	1	1
AAQ	31	30	13	28	17	10	18	15	15	25	17	15

Note. AAQ = Acceptance and Action Questionnaire; BAI = Beck Anxiety Inventory; BDI-II = Beck Depression Inventory-II; Believable = How believable are your obsessions?; OCI = Obsessive Compulsive Inventory; Freq. = Frequency subscale of OCI; Dis. = Disturbance subscale of OCI; React = How strongly do you feel that you must react to your obsessions?; TEI-SF = Treatment Evaluation Inventory-Short Form.

posttreatment, with continued decreases or maintained levels at 3-month follow-up.

Treatment process measures. All participants completed the AAQ at pretreatment, posttreatment, and follow-up. All participants showed reductions from pretreatment to posttreatment, with continued decreases or maintained levels at 3-month follow-up. On the defusion measure, all participants except Participant 4 (possibly due to floor effects) showed decreases in the believability of obsessions and how strongly they felt they needed to react to the obsession, from pretreatment to posttreatment, with continued decreases or maintained levels at follow-up.

Treatment acceptability data. All participants completed the TEI-SF at posttreatment and all participants rated the treatment as highly acceptable. The average TEI-SF score was only 4 points below the maximum score on the measure.

Discussion

This study demonstrated the effectiveness of an eight-session ACT for OCD intervention (without in-session exposure) in a nonconcurrent, multiple-baseline, across-participants design, where the main dependent measure was self-reported compulsion frequency. Decreases in self-reported compulsions in the present study were large and well-maintained over the 3-month follow-up, despite the relatively brief intervention. The responses were similar regardless of the specific type of compulsion, including hoarding, a problem of known difficulty (Clark, 2004). Self-reports were supported with large decreases in scores on the frequency and disturbance subscales of the OCI, and decreases continued at follow-up. Positive changes were also seen in anxiety and depression for all four participants. All participants found the treatment to be highly acceptable, close to the maximum on the measure used. Finally, although it is not possible to conduct formal mediational analyses with these data, as in other studies of ACT processes (e.g., Bach & Hayes, 2002; Bond & Bunce, 2000; Gifford et al., 2004; Hayes et al., 2004) positive outcomes were associated with positive changes in the putative processes within an ACT model. The treatment was associated with decreases in the believability of obsessions, the need to respond to the obsession, and with positive changes on the AAQ.

While in-session exposure was not used, participants chose behavioral commitment exercises that necessarily involved exposure to feared situations outside of sessions. The purpose of these commitments was ACT consistent (as a means to practice acceptance, defusion, and valued action), and

changes in these processes did occur, but this was not a comparative study so it is not clear whether behavioral commitments (and thus exposure) would have alone been enough to produce the effects seen. The high level of treatment acceptability shown in the present study, however, provides hope that the forms of exposure used in the present study were not aversive to these participants. Indeed, recent studies suggest that acceptance (e.g., Levitt et al., 2004) and defusion (e.g., Gutiérrez et al., 2004) interventions in ACT reduce the aversiveness of exposure to difficult events.

The large reductions in obsessions and other negative private events is ironic given that ACT does not directly target the content of emotion and cognition, but it comports with previous ACT research in several other areas (see Hayes et al., 2004). When the function of negative private events changes, their form often changes without direct disputation or correction, as indeed is predicted by the theory of cognition underlying ACT (Hayes et al., 2001).

The present study was not designed to distinguish ACT from traditional CBT or ERP. Doing so is relatively straightforward at the level of specific procedures (for example, in the present study, in-session exposure was eliminated to increase the technological differences between this protocol and ERP protocols), but it is difficult at the level of theory. All three approaches are part of behavior therapy, broadly defined, and overlap deeply for that reason, and yet each approaches key concepts in distinct ways.

In ACT, the goal is to help the individual experience an obsession for what it is (i.e., a thought) and continue doing what is important to them. The actual presence of the obsession is not the primary issue. Said another way, the goal is to broaden the individual's effective repertoire in the presence of feared events (e.g., the obsession)—what has been termed “psychological flexibility” (Hayes, 2004). The client in exposure-based therapy who learns to “sit with the anxiety” rather than to escape or avoid it may similarly be learning to do other things with the obsession and anxiety present. It has been argued that such new response functions are at the very core of extinction, even in animal models (Bouton, 2002), and thus both interventions are seeking to promote extinction in the sense of broadening the individual's repertoire in the presence of stimuli where psychological rigidity is present (Wilson & Murrell, 2004).

Foa and Franklin (2001) suggest that cognitive procedures should be included in the treatment of OCD when necessary, but no standard procedures have been offered or tested. If ACT were to be

incorporated into ERP, little would need to change except that the theoretical rationale for exposure would have to be altered. Most forms of exposure are conducted with the expectation of first-order emotional and cognitive change: “It seems likely that extended periods of exposure permit emotional discomfort (usually anxiety) to dissipate, so that the feared situations provoke less reaction. This in turn may alter the person’s attitudes toward the situation and the expected outcomes” (Steketee & Barlow, 2002, p. 540). Exposure done from an ACT perspective, conversely, is for the purpose of increasing willingness to experience private events, as they are, so the person can live a more valued life (an approach that, ironically, often results in a decrease in negative content, as seen on the OCI scores in the present study). It is not yet known whether such an approach would increase the *effectiveness* of exposure, but there are indications that it could increase the *acceptability* of exposure (Levitt et al., 2004).

In order to compare these procedures, more evidence will be needed on their mechanisms of action. In ACT there are preliminary data that change in acceptance and defusion, not change in emotional or cognitive content, mediate outcomes (e.g., Gifford et al., 2004; Hayes et al., 2004), but much more work of this kind is needed. The same is true of alternative methods such as traditional CBT or ERP.

The present study contains a number of limitations. Although it suggests preliminary efficacy of ACT, the multiple baseline design used in this study does not rule out a number of other possible explanations for treatment effects, especially placebo or expectancy/demand effects. There have been several placebo-controlled investigations in the treatment of OCD, however, and the lack of response to placebos have led researchers to conclude that one can “presumably look beyond nonspecific factors such as the amount of time spent with the therapist or the simple discussion of symptoms” (Abramowitz, 1997, p. 49). Although demand effects particular to this treatment cannot be ruled out, certain controls existed. The effects of therapist contact alone were partially controlled for because pretreatment assessments took place before monitoring, and all participants were in contact with the therapist when they called in their self-monitoring numbers during baselines. Additionally, three of the four participants had previously received some type of intervention without decreases in OCD. Finally, all participants showed profound decreases on multiple measures—a result that would not be expected with demand alone. Even so, direct comparisons between ACT for OCD

and a well-crafted psychological control condition remain to be done.

Another limitation involves the purported mechanism of change in ACT as a treatment for OCD. ACT was theorized to produce changes in compulsions by increasing one’s willingness to experience the obsession and not engage in behaviors to decrease it. Face-valid self-report measures demonstrated favorable changes in assessments of believability and need to act on the obsession, and favorable changes were seen on the AAQ, which is a measure of experiential avoidance. However, more specifically targeted measures need to be created that can track changes in ACT-relevant processes in OCD treatment. A final design limitation includes the lack of behavioral measures and formal and validated diagnostic tests for the presence of OCD and comorbid conditions. This area could be strengthened if a blind rater assessed the presence or absence of OCD at pretest, posttest, and follow-up. Future research should utilize such procedures.

What is most positive about the present research is that it opens the door to an alternative approach to the difficult thoughts, feelings, and behaviors seen in OCD. The outcome, process, and treatment acceptability data indicate that ACT is an intervention that deserves further examination in the treatment of OCD. If more extensive controlled research shows positive results for ACT, it may be worth clarifying the procedural and process differences and similarities between this approach and other empirically supported approaches for OCD.

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