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

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Abstract

This study evaluated the effectiveness of an eight 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 three-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.

Key Words: Acceptance; Acceptance and Commitment Therapy; ACT; Cognitive therapy; Exposure; Obsessive Compulsive Disorder; OCD; Treatment

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

Obsessive compulsive disorder (OCD) has been cited as one of the most common and debilitating psychological disorders; it is the forth 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 effectiveness rates for exposure with ritual prevention (ERP) ranging from 60-85% (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 3-12% will drop out of treatment (Foa, Steketee, Grayson & Doppel, 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, 1998). 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 drop-out than a group that received ERP plus relaxation training (Vogel, Stiles, Gotestam, 2004), but these findings were not supported in other studies (e.g, Cottrauxet 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 fairly direct. Foa and Franklin (2001) characterize their treatment clearly in this way: “This treatment is specifically aimed at 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 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).

The idea that thoughts, feelings, or bodily sensations must be altered or changed directly in order to produce clinical progress has recently been challenged, however. Several new “third wave” behavioral and cognitive interventions (Hayes, 2004) have emerged that focus on 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; McCullough, 2000; Marlatt, 2002; Martell, Addis, & Jacobson, 2001; 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 contexts so as to decrease the believability of ones 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 (APA, 2000). Direct change efforts could paradoxically increase this cognitive focus, a danger that is less prominent with defusion and acceptance strategies. 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 to the individual rather than spending large amounts of time trying to decrease the obsession or avoid anxious feelings.

There are overlaps between ACT, ERP, and CBT for OCD. Any intervention for an anxiety disorder is going to involve exposure to anxiety producing events as either a central component of the intervention, as in ERP, or as part of the participant's life as in strict cognitive therapy for OCD. ACT likewise necessarily includes exposure as part of the participant's daily activities (indeed ACT often includes formal in-session exposure although the current protocol included none in order to maximize the distinction between the present approach and traditional ERP). In ACT this process is a) broadly focused to include a full range of both situational and private events, such as thoughts, feelings, memories, bodily sensations, and the like, and b) used as a means to practice acceptance and defusion in the context of the pursuit of valued activities that are meaningful to the participant, rather than as a means of anxiety reduction or cognitive change. This is different that traditional exposure, which is done with the expectation of first-order emotional and cognitive change: "Although no one is quite sure why exposure is effective, 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). Similarly, in there modern forms all three interventions acknowledge that direct attempts to control ones obsessions may result in paradoxical outcomes, but ACT takes this assumption further and includes no specific attempts to decrease the obsession or the anxiety associated with it.

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 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, 2003), 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 non-concurrent multiple baseline across with 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 a clinical interview, all four individuals met criteria for OCD (as defined in the DSM IV-TR), 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 would check as he walked, if he heard something that sounded like one of these items, and if he was in a position where they could have fallen out of his pocket such as sitting in a chair. Participant 2's obsession involved hoarding. He would save 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 would check to make sure her windows in her car and home were open exactly an 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 "3X5" 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, 1998) The OCI is a 42-item measure of obsessive 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 clinical means for both subscales in a sample of individuals diagnosed with OCD = 66, and nonpatient controls =25. The OCI has a 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.

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 (rs >.60), and 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 et al., in press). The AAQ is a 9-item questionnaire that measures experiential avoidance. Questions are rated on a seven-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 et al., in press).

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, where 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, α=.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 to self-monitor the number of compulsions per day, throughout the course of the study.

The intervention was evaluated a nonconcurrent multiple baseline across participants design. A 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 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 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 monitor during baseline for between one

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 one week of monitoring. For the other participants, treatment began after the previous participant showed decreases in compulsions during the treatment phase.

Treatment consisted of eight, weekly, one-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 by 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, 2= the variable occurred at least once and not in an in-depth manner, 3= the variable occurred several times and was covered at least once in a moderately in-depth manner, 4= the variable occurred with relatively high frequency and was addressed in a moderately in depth manner, 5=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 that 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, willingness/acceptance = 2.8, defusion = 2.5, values = 2.4, committed action = 1.8, and general assessment of participant's functioning = 3.1. The therapist's overall adherence to the manual and overall competence were rated very highly, *M's* = 4.9 and 4.4 respectively. In 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 consider inconsistent with the protocol. All ACT inconsistent measures received scores of one, indicating they were not observed.

Acceptance and Commitment Therapy 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 valued guided behavior instead of behavior guided by attempts to control one's private events. Examples of behavioral commitments included not engaging in the compulsion while on campus, removing a vehicle-full of saved items for participant two, and spending two hours at the park with one's family. These are all clear behavioral commitments to specific activities for specified periods of time, without regard to ones obsessions or anxiety.

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 as falling in 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 out of the hole (representing attempts to reduce or control the obsession), never got them out of the hole and actually made the hole seem larger (the paradox of how struggling with ones 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 three and four 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" (Hayes et al., 1999, p. 123) machine. These exercises were designed to help the participant experience the difference between an obsession (and 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 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 capacity to control behavior.

Sessions five and six 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 where 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 offering 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 very similar and contains many of the same principals as several other meditation and acceptance-based approaches including mindfulness based therapies. Contact with the present moment was fostered by particular experiential exercises such as the "Soldiers In The Parade Exercise" (Hayes et al., 1999, p. 158), which involves contacting ones private events in the present moment without holding onto any one thought or feelings – just observing what occurs.

Self as context work assists the participant is 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. The "Chessboard Metaphor" (Hayes et al., 1999, p. 190), where

the client is described as the chessboard and the pieces are the obsessions, was used to help the participant see that the obsession could exist without damage occurring - just as the chessboard can exist without being damaged by the obsession or anxiety.

The final two sessions, sessions seven and eight, involved discussions of the clients 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 difference areas including: family, occupation, and recreation. The participant 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 ones 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 three months posttreatment, the 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 one to seven week baseline. All showed very large reductions during treatment and retention of most or all of the gains during follow-up. Data was 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 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 three-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 two and continued to decrease throughout treatment (posttreatment *M*=3.7, *SD*=0.5). These results were maintained at follow-up (M=2.5, *SD*=0.7). This participant also reported removing approximately 10 truck-loads 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*=0.3, *SD*=0.8). 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*=0.1, *SD*=0.4). These results were maintained at follow-up (*M*=2.5, *SD*=0.7).

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 post, and improved further to 81% from pre treatment to follow-up. At pretreatment all participants were within one standard deviation of the clinical mean on both subscales of the OCI and 3 of the 4 subjects were at or above the OCD clinical mean for either distress or frequency (Foa et al., 1998). At post and at follow up all participants were below the non-clinical means on both subscales (see measures section for the clinical and non-clinical 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 posttreatment, with continued decreases or maintained levels at three-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 three-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 the 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 four points below the maximum score on the measure.

Discussion

This study demonstrated the effectiveness of an eight session ACT for OCD intervention 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 three month follow-up, which seems all the more interesting given the relatively brief duration of the intervention (eight hours). 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 with continued decreases 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 and 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.

None of these changes involved formal in-session exposure. While ACT and ERP are technologically distinguishable, however, ACT is an inherently exposure-based treatment. ACT involves deliberately contacting difficult psychological experiences, and indeed formal exposure is often included in ACT protocols. The present protocol deliberately avoided in-session exposure in order to increase the discriminability of ACT and ERP for purposes of this study. The two are related in multiple ways, however. In one sense exposure is necessarily part of all successful OCD treatments virtually by definition in that sense that successful clients will experience the obsession and not engaging in escape behaviors outside of session, and the

present protocol did include deliberate attempts to foster progress of that kind. ACT may provide a less aversive alternative strategy to engage clients in exposing themselves to the obsession. It is known that ACT's acceptance (e.g., Levitt et al., 2004) and defusion (e.g., Gutiérrez et al., 2004) interventions reduce the aversiveness of exposure to difficult emotions. Values work may also contribute to this effect because in ACT exposure is not done to decrease the obsession but to move toward client values (e.g., spending more time with one's family).

At a theoretical level, the connection is deeper. In an ACT approach, 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 in other way, the goal is to broaden the individual's effective repertoire in the presence of feared events (e.g., the obsession) that previously had only avoidance and escape functions, what has been termed "psychological flexibility" (Hayes, 2004). Functionally, this process could be quite similar to what occurs in exposure and extinction. The client in exposure-based therapy who learns to "sit with the anxiety" rather than to escape or avoid it, and may learn 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 provided that process is defined as broadening the individual's repertoire in the presence of stimuli where psychological rigidity is present (Wilson & Murrell, 2004). ACT specifically applies this same approach to thoughts and feelings, and teaches skills (i.e., acceptance, mindfulness, defusion) designed to make it more possible. Given these multiple areas of overlaps, it is not difficult to combine the two interventions in a theoretically consistent manner. 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. In ERP, it is explained that exposure is being done in the service of habituating to the obsession and associated anxiety; in other words it is done to get rid of the obsession (Foa & Franklin, 2001). 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. Whether or not such a combination would increase the *effectiveness* of exposure, there are already indications that it could increase the *acceptability* of exposure (Levitt et al., 2004).

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 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 ones 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 a form of intervention that deserves further examination in the treatment of OCD. Future researchers need to clarify the procedural differences between ACT, ERP, and CBT for OCD and directly compare them in terms of short and long-term effectiveness, acceptability, attrition, duration of the intervention, and the processes through which the intervention produce their results.

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A copy of the complete treatment manual is available from the first author, Michael Twohig (e-mail: twohigm@unr.nevada.edu) and is posted on the ACT website: www.acceptanceandcommitmenttherapy.com.

Table 1
Participant Characteristics Table

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

Marital status, S=single, D=divorced; Years of education begin with first grade (e.g., 12=high school education, 16=four years of post high school education); Ethnicity, AA=African American C=Caucasian, C/H=Caucasian and Hispanic; Previous diagnoses, P.D.=Panic Disorder, ADHD=Attention Deficit Hyperactivity Disorder, PTSD=Post Traumatic Stress Disorder

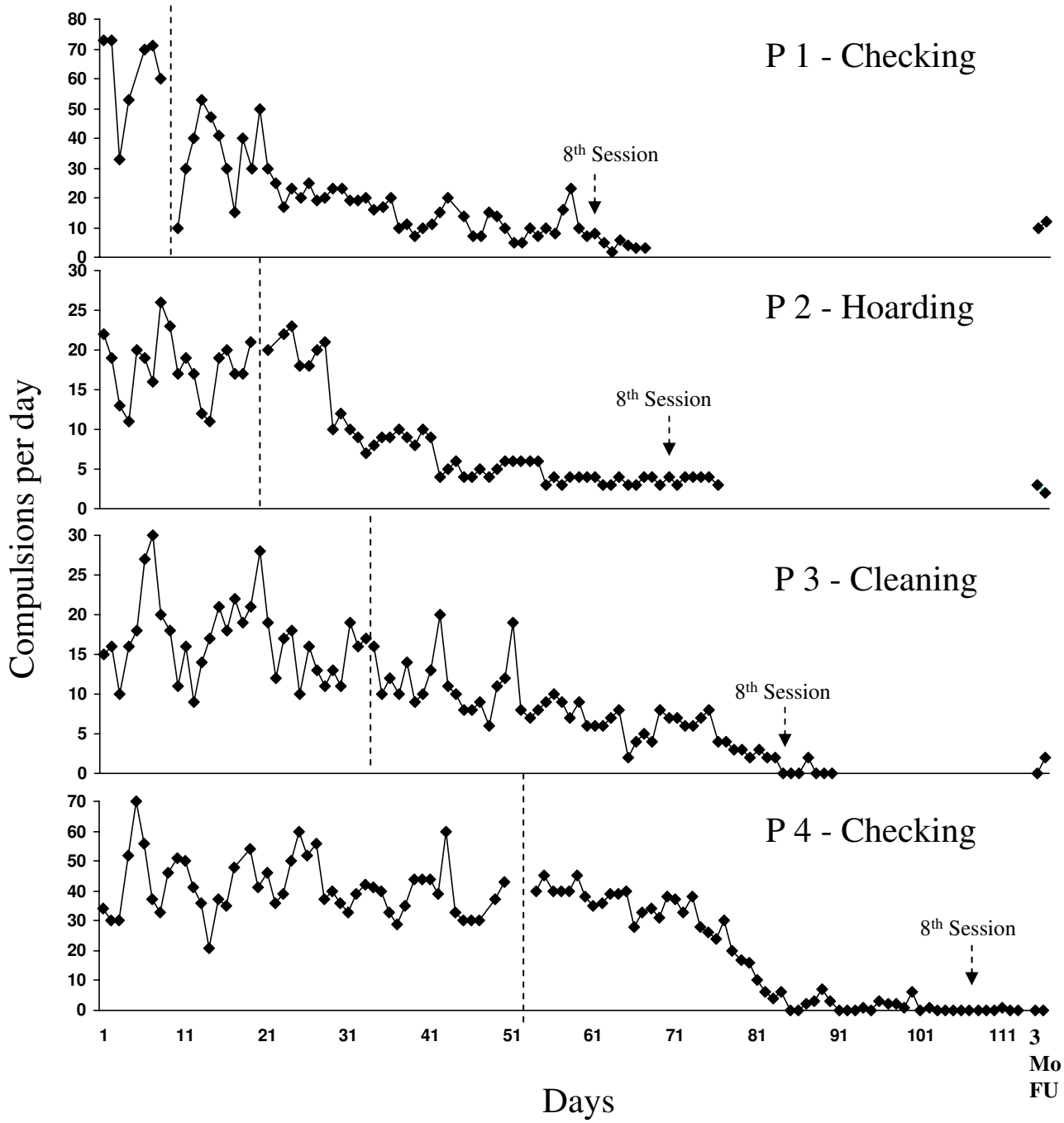
Table 2.
OCD, Anxiety, Depression, Treatment Acceptability, and Process Measures Scores for Pretreatment, Posttreatment, and 3 Month Follow-up

	P1			P2			P3			P4		
	Pre	Post	FU	Pre	Post	FU	Pre	Post	FU	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	28	7	2	15	9	0	9	1	0	16	5	3
TEI		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

AAQ= Acceptance and Action Questionnaire, BAI= Beck Anxiety Inventory, BDI= 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= Treatment Evaluation Inventory - Short Form

Figure Caption

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


P 1 - Checking
8th Session
P 2 - Hoarding
8th Session
P 3 - Cleaning
8th Session
P 4 - Checking
8th Session
Compulsions per day
Days
1
11
21
31
41
51
61
71
81
91
101
111
3 Mo FU