Acceptance and Commitment Therapy for Individuals with Problematic Emotional Eating:

A Case-Series Study

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Abstract

Emotional eating is characterized by eating in response to intense inner emotions, not hunger. This case-series study presents the outcomes from two adults with problematic emotional eating who voluntarily participated in 10 weekly sessions of Acceptance and Commitment Therapy (ACT). Emotional eating was self-monitored daily prior to and throughout the course of treatment. The average number of emotional eating episodes reported weekly across participants at pre-treatment was 9, which decreased to 2 per week at follow-up. Both participants also showed improvements in body image flexibility, a theoretically consistent process of change, and these improvements were maintained at 3-month follow-up. The results are discussed as well as implications for clinical practice and future research.

**1 Theoretical and Research Basis for Treatment**

Emotional eating (EE) has been defined as the tendency to eat in response to feelings, such as anger and anxiety, not in response to hunger(Arnow, Kenardy, & Agras, 1995; Gelieber & Aversa, 2003; Grossens, Braet, van Vleirberghe, & Mels, 2009; van Strein et al., 2007). It has been suggested that those who regularly engage in EE have difficulty distinguishing between hunger cues and physiological sensations associated with difficult emotions (Bruch, 1964). Regardless of the amount of food consumed, EE often occurs impulsively or automatically without awareness (Arnow, Kenardy, & Agras, 1995). EE has also been linked to binge eating disorder (BED; Stein et al., 2007), bulimia nervosa (BN; Ricca et al., 2012; Stice, 2001), and anorexia nervosa (AN; Ricca et al., 2012).

Recent evidence suggests that EE can be best conceptualized as a maladaptive emotion regulation strategy, rather than a behavior triggered by particular emotions. EE seems to reflect not only particular emotions that occasion it, but also emotion regulation strategies through which one deals with these emotions. For example, EE is associated with a number of maladaptive regulation strategies (Evers, Marijn Stok, & de Ridder, 2010; Gianini, White, & Masheb, 2013; Turner, Luszczynska, Warner, & Schwarzer, 2010), and negative affect alone does not explain EE above and beyond emotional and avoidant coping styles in a clinical sample of women with eating disorders or healthy controls (Spoor, Bekker, Van Stien, & van Heck, 2007). Individuals who engage in disordered eating behavior, including EE, often lack adaptive emotion regulation skills and use EE as a way to cope with emotional states (Gianini et al., 2013; Sim & Zeman, 2006). This set of findings suggests that the problem is not necessarily attributable to the presence of particular emotions, but rather to the absence of adaptive emotion regulation strategies for regulating those emotions.

Acceptance and commitment therapy ([ACT; Hayes, Strosahl, & Wilson, 2012](#_ENREF_22)), an acceptance- and mindfulness-based cognitive behavior therapy, has been used in the treatment of eating pathology in recent years (see Manlick, Cochran, & Koon, 2013; Masuda & Hill, 2013). The application of ACT to eating pathology is based on the substantial body of evidence that psychological well-being can be promoted through increasing adaptive responses to strong emotion and behavior regulation and activating behaviors that are adaptive and reinforcing (Kashdan & Rottenberg, 2010).

Clinically, ACT directly targets the increase in these regulation strategies and adaptive behaviors. More specifically, the overarching goal of ACT is the promotion of greater behavior adaption through alternative and adaptive regulation process of openly and fully experiencing challenging emotions and thoughts and behavioral commitment to activities that are intrinsically reinforcing or linked to personal values. The primary goal of ACT is not necessarily the elimination of problem, but the promotion of greater well-being (Hayes, Strosahl, & Wilson, 1999).

From an ACT perspective, EE is problematic because it interferes with living a constructive and value-consistent life, not so much because it is associated with strong internal experiences. With the overarching goal of promoting behavior adaptation, ACT aims to break the behavioral cycle of engaging in problematic behaviors in response to unwanted emotional experiences, including EE (Hayes et al., 1996; Heffner, Sperry, Eifert, & Detweiler, 2002; Lillis, Hayes, Bunting, & Masuda, 2009). ACT is designed to do so by undermining the impact of cognitions that regulate EE and by promoting psychological openness and mindfulness to challenging emotions and thoughts that occasion EE. For the purpose of activating adaptive and value-consistent behaviors across a wide range of life contexts, ACT encourages engagement in meaningful behaviors regardless of emotional content. This overall alternative behavioral pattern in the context of EE related inner experiences and body dissatisfaction is called body image flexibility (Hill, Masuda, & Latzman, 2013; Sandoz, Wilson, Merwin, & Kellum, 2013).

Preliminary evidence supports ACT as a potential treatment for a range of disordered eating concerns, including EE (Manlick et al., 2013; Masuda & Hill, 2013). Case-series studies suggest that individual outpatient ACT may be an effective treatment for improving daily functioning and reducing eating pathology in clients with AN and subclinical AN (Berman, Boutelle, & Crow, 2009; Heffner et al., 2002; Masuda, Muto, Hayes, & Lillis, 2008) as well as clients with BED (Hill, Masuda, Melcher, Morgan, & Twohig, in press). One-day ACT workshops improved body image flexibility and reduced eating pathology among females with body dissatisfaction (Pearson, Follette, & Hayes, 2012), and reduced binge episodes and improved quality of life among adults with obesity (Lillis et al., 2009; Lillis, Hayes, & Levin, 2011). The decreases in binge eating were mediated by changes in psychological inflexibility, a maladaptive regulation process (Lillis et al., 2011). Group ACT added to treatment as usual (TAU) has also been successfully used in a residential treatment setting for individuals diagnosed with AN and BN; participants in the ACT plus TAU group showed greater decreases in eating pathology and lower rates of hospitalization at 6 months follow-up than the TAU group (Juarascio et al., 2013). In a study comparing ACT to traditional CBT for disordered eating, CBT produced modest decreases in eating disorder symptoms, and ACT produced large decreases (Juarascio, Forman, & Herbert, 2010).

Evidence of ACT as a treatment of eating pathology is growing, but still limited. As such, it is essential to continue to test the ACT model across different disordered eating concerns, like EE. The current study employed a case-series design in which two adults who had been struggling with EE for several years tracked the frequency of daily EE and weekly levels of body image flexibility. In addition, participants completed standardized assessments of broad disordered eating concerns and psychological functioning at pre-treatment, midpoint, post-treatment, and 3-month follow-up.

**2 Case Introduction**

Two participants enrolled in the study. Both participants self-identified as being a sexual minority (i.e., “gay” and “queer”), and they were in committed romantic relationships at the time of intake as well as throughout the course of study (see Table 1 for additional demographic information). Participant 1 was a 27-year-old Caucasian female graduate student at a southeastern university in the United States. At the time of the pre-treatment screening session, her self-report height was 5’5”, weight was 300 pounds, and body mass index (BMI) was 49.1. Regarding her psychiatric history, she previously sought psychotherapy for grief and post-traumatic stress disorder, respectively. She did not receive any adjunct therapy at the time of the study.

Participant 2 was a 40-year-old Mexican-American male undergraduate student attending at the same southeastern university. At the pre-treatment screening session his self-report height was 5’7”, weight was 190 pounds, and BMI was 29.8. He had previously received therapy for substance dependence and depression. At the time of the study he was actively participating in a twelve-step peer support group, and he and his romantic partner were participating in monthly couples counseling. He was not receiving adjunct therapy for EE or other psychological concerns.

**3 Presenting Complaints**

Participant 1 reported that her primary concern was “EE without awareness,” which she described as eating as a way to cope with feelings of stress and anxiety often without awareness. She described her EE as impulsive and problematic, regardless of the amount of food consumed. Her EE was accompanied with what she termed “mind fuzziness” and physical lethargy that hindered her from participating fully in important activities, such as spending quality time with her partner. The amount of food consumed during an EE episode reflected binge eating, and Participant 1 met criteria for binge eating disorder (American Psychiatric Association, 2013).

Participant 2 endorsed regularly engaging in EE which had begun to interfere with his productivity at school and work and had also led to medical problems. While EE had been problematic in the past, Participant 2 reported that at the time of intake he had done EE more frequently in response to life stressors (e.g., school andwork ). He also endorsed moderate to severe levels of social anxiety in various situations, including social events, classes, and when giving presentations for work and school. Anxiety in these situations was often accompanied by self-defeating beliefs, such as “I’m stupid” and “I’m less than others.” Participant 2 reported that he often used food as a way of distracting himself from anxiety while in these situations. He endorsed significant distress and impairment as a result of his EE and met criteria for an eating disorder not elsewhere classified (American Psychiatric Association, 2013).

**4 History**

Participant 1 reported that she had begun using food as a way to cope with sadness and grief after her father passed away when she was a child. She had participated in weight loss programs in elementary school and again in college; however, she reported that these programs were not beneficial long-term because they did not focus on developing a healthy lifestyle but instead had “a lot of guilt and shame built in.” While she lost a sizeable amount of weight during the program, she gained all of the weight back shortly after. She reported that EE was helpful when she was younger to cope with difficult emotions, but believed that she would benefit from learning new ways of coping with her emotions. She also reported that she had been diagnosed with PTSD after a sexual assault when she was an undergraduate student. She had received psychotherapy for PTSD and reported that she was no longer struggling with this issue.

Participant 2 reported a long history of depression, anxiety, body dissatisfaction, disordered eating, compulsive exercise, problematic substance use, and other compulsive behaviors. He reported that he had struggled with depression and anxiety to varying degrees since adolescence and used food, exercise, and illicit substances as ways of coping. He first began dieting at age 15 and had been engaging in EE, restricting, overeating, and compulsive exercise on and off since then. He also reported that he had engaged in self-induced vomiting and laxative use periodically. Participant 2 had been sober from drugs and alcohol for five years, and reported that he paralleled his current struggle with EE with his previous struggle with substance abuse.

**5 Assessment**

*Screening Assessment*

Participants completed an initial screening assessment prior to beginning the study, including a diagnostic assessment of eating disorders. As mentioned previously, Participant 1 met criteria for BED according the DSM-5 criteria (American Psychiatric Association, 2013) assessed by the Structured Clinical Interview for DSM-IV-TR Axis I Disorder (First, Spitzer, Gibbon, & Williams, 2002). Her weight fell within the obese range according to BMI, which was computed using self-reported height and weight. Participant 2 was screened using the same screening tools and did not meet criteria for a traditional eating disorder; however, he did endorse significant distress and impairment as a result of his EE, including weight-related health concerns like high blood pressure and high cholesterol. His weight fell within in the overweight range.

Other psychological disorders and conditions were not formally assessed, with the exception of borderline personality disorder and schizophrenia by the Structured Clinical Interviews (First, Gibbon, Spitzer, & et al., 1997; First et al., 2002). Neither participant met criteria for these disorders, nor did they endorse current suicidal ideation or substance use problems. Finally, neither of the participants reported using psychotropic medications during the course of the study.

*Outcome and Process Assessment*

The primary outcome variable of the study was EE, and participants reported the frequency of EE at the end of each day via email. Participants also completed a self-report measure of body image flexibility, an ACT-specific process of change, weekly at the beginning of each therapy session and completed self-report disordered eating measures and measures of other relevant issues at pre-treatment, the mid-point of treatment, post-treatment, and at a 3-month follow-up (see Tables 2 and 3 and Figure 1).

**Self-monitoring of EE.** Following the completion of the screening assessment, the participants identified EE as their target behavior to be monitored. EE was operationalized as “an episode of eating any amount of food impulsively when not hungry in response to an emotional experience.” Participants were instructed to email the study personnel at the end of each day with the frequency of EE for that day. Participant 1 contacted the second author who served as her therapist, and Participant 2 contacted the first author who served as his therapist during the course of treatment. These data points served as the main outcome variable and partially guided treatment.

**Self-report ACT-consistent process of change variables.** Participants completed the Body Image-Acceptance and Action Questionnaire (BI-AAQ; Sandoz et al., 2013) each week. The BI-AAQ is a 12-item self-report measure designed to assess body image flexibility which is a kind of psychological flexibility specific to body image. The scale measures the extent to which individuals struggle with negative body image, the degree to which they avoid or are affected by body image-related negative psychological experiences, and the extent to which individuals engage in values-consistent activities despite body dissatisfaction. All items are rated on a 7-point Likert-like scale ranging from 1 (n*ever true*) to 7 (*always true*). Total scores for BI-AAQ range from 12 to 84. All items are reversed scored so that higher scores indicate higher body image flexibility. The BI-AAQ has shown good internal consistency (Cronbach’s alpha = .92), as well as concurrent, criterion-related, and incremental validity in an undergraduate population (Sandoz et al., 2013).

**Self-report outcome variables.** The following measures were administered at pre-treatment, mid-point, post-treatment, and 3-month follow-up to examine the effects of the ACT intervention.

***Global disordered eating.*** The Eating Disorder Examination-Questionnaire (EDE-Q; Fairburn, 2008) is a 36-item self-report questionnaire designed to assess a variety of eating disorder symptoms over the past 28 days, including the severity of dietary restraint and concerns about eating, shape, and weight (e.g., “Have you been deliberately trying to limit the amount of food you eat to influence your shape or weight?”). The global score is the sum of all EDE-Q items. The EDE-Q has good internal consistency with a Cronbach’s alpha of .95 for the global score in a recent study (Aardoom, Dingemans, Slof Op't Landt, & Van Furth, 2012). It has been used with both clinical and community samples (Fairburn & Bèglin, 1994; Luce & Crowther, 1999; Wilfley, Schwartz, Spurrell, & Fairburn, 1997).

***Emotional eating.*** Emotional eating was measured using the Emotional Eating Scale (EES; Arnow et al., 1995). The EES is a 25-item self-report measure, and each item consists of an emotion term such as, “angry,” ”lonely,” “irritated.” All items are rated on a 5-point scale ranging from 0 (*No desire*) to 4 (*Overwhelming urge*). Individuals rate the extent to which they experience the identified emotion while engaging in eating behavior. Scores range from 0 to 44 on the EES anger subscale, 0 to 36 on the anxiety subscale, and 0 to 20 on the depression subscale, with greater scores indicating greater emotional eating. Previous studies have shown that the EES has adequate internal consistency in clinical samples with obesity, with Cronbach’s alphas of .78, .78, and .72 for anger/frustration, anxiety, and depression subscales, respectively (Arnow et al., 1995) and non-clinical samples with Cronbach’s alphas of .87, .84, and .80 for the anger/frustration, anxiety, and depression subscales respectively (Waller & Osman, 1998).

***Clinical impairment due to disordered eating.*** Functional impairment due to disordered eating was measured using the Clinical Impairment Assessment 3.0 (CIA 3.0; Bohn et al., 2008). The CIA 3.0 is a 16-item, self-report measure of psychosocial impairment due to disordered eating in the past 28 days (Bohn et al., 2008). Items are rated on a 4-point Likert-like scale, ranging from 0 (*Not at all*) to 3 (*A lot*). A CIA 3.0 global score is calculated as a severity index, ranging from 0 to 48, with greater scores equating greater impairment. The CIA 3.0 has demonstrated high levels of internal consistency, with a Cronbach’s alpha of .97 (Bohn et al., 2008).

**6 Case Conceptualization**

The case conceptualization for both participants was based on an ACT model of disordered eating, which emphasizes understanding the function, or purpose, of particular behaviors in a given context. The ACT model suggests that EE can be understood as a behavioral attempt to escape, avoid, or distract from difficult thoughts and emotions. EE tends to “work” temporarily to distract from those uncomfortable thoughts and emotions; however, it does not work as a long-term solution because the difficult thoughts and feelings will return. Furthermore, individuals often experience other uncomfortable internal experiences in addition to the initial ones from which they were trying to escape. For example, both participants reported engaging in EE as a way to escape or distract from feeling lonely but then reported feeling guilt and frustration afterwards as a result of their EE. From an ACT perspective, EE becomes problematic when it is used excessively and rigidly to regulate difficult thoughts and emotions (Hayes et al., 1996).

The ACT model also suggests that EE is problematic when it interferes with one’s ability to fully engage in valued activities (Hayes et al., 1996). Not only do avoidant coping strategies not work in the long-term to permanently reduce or eliminate difficult thoughts and feelings, but these strategies also lead to narrowed behavioral repertoires that reduce one’s ability to come in contact with personally meaningful and important activities. ACT suggests that individuals are able to choose their response to difficult internal experiences through either engaging in EE or simply noticing those experiences and choosing to engage in more adaptive behaviors. Key components of ACT are helping individuals identify life values and empowering them to choose their course of action, with or without their difficult thoughts and feelings. Both participants reported that EE had increasingly required more time and energy, which reduced their ability to participate fully in hobbies, academic pursuits, romantic relationships, friendships, and personal growth and exploration.

Consistent with the ACT model, it was important to identify situational triggers for EE and determine the short-term and long-term consequences of acting on these triggers. For the participants in the current study, food was a source of comfort or distraction when they felt bored, anxious, angry, confused, guilty, and lonely. Participant 1 reported that EE was a problem because it inhibited her connection with her partner and kept her from getting in touch with her emotions. For example, she reportedly would engage in EE to “calm down,” but would then feel physically tired and cognitively/emotionally disconnected from others. Participant 2 reported that EE distracted him from “real issues” (such as social anxiety and academic concerns) which often made those problems more difficult to address afterwards. For example, he reported that he would often engage in EE when he felt anxious about a school assignment, which helped him to distract from his anxiety; however, he would feel more anxious as the deadline for the assignment became closer. For both participants EE also led to concerns about physical health associated with being overweight. With that, the primary goals of the study were to increase participants’ awareness of their EE and its situational triggers within, notice the internal experiences that occurred, watch those experiences and not get caught up in them, and engage in meaningful activities even though those experiences were occurring, all in the service of improving daily functioning and overall well-being.

**7 Course of Treatment and Assessment of Progress**

The diagnostic screening and all other measures were administered during an initial pre-treatment assessment session. Participants were then asked to monitor the frequency of EE daily throughout the course of study. Based on the case conceptualizations, the participants were treated using a 10-week semi-manualized ACT protocol. In addition to the daily recording of EE, the participants were asked to complete the ACT process measure weekly and to complete the assessment package at pre-treatment, mid-point, post-treatment, and three-month follow-up. At the 3-month follow-up, participants monitored their EE for another week.

The manualized ACT treatment consisted of 10 weekly 50-minute individual therapy sessions (see Hill et al., in press for detail description of this ACT protocol). The number of sessions was limited to 10 to determine the effectiveness of a brief ACT intervention. Despite its manualized nature, the content and pace of sessions were tailored to the individual in order to best meet the needs of each participant while also maintaining the functional adherence to ACT (e.g., focus on behavior activation, mindfulness and acceptance of difficult internal experiences). Each session began with a brief mindfulness exercise and then moved to the treatment agenda set for that session. The regular mindfulness practices helped to build the skill of gentle, nonjudgmental awareness of present moment experiences. During each session, the therapist discussed EE episodes that had occurred since the last therapy session.

The first area of focus in the intervention was determining the function of participants’ EE. While participants had identified EE as a problem, they had little insight as to how it was maintained functionally as well as the scope of its impact on daily life. As such, it was important for the therapists to assess if participants engaged in EE in order to escape or distract from difficult emotions (e.g., anger, sadness, loneliness). Both participants indicated that this was the case, and the next part of therapy helped participants increase their awareness of this functional link and the long-term consequences of using EE to regulate internal experiences. In ACT literature, this functional process is called experiential avoidance and is targeted in treatment using “creative hopelessness” and “control is the problem” techniques ([Hayes et al.,](#_ENREF_21) 2012). The experiential exercises in ACT suggest that it can be beneficial to let go of ineffective emotion regulation coping strategies, like EE. Both participants recognized that EE was a way to distract themselves from difficult thoughts and feelings and that they were unable to completely eliminate or avoid these unwanted internal experiences. Furthermore, after engaging in EE they often experienced feelings of guilt, shame, sadness, and frustration.

The next area of focus in treatment was to teach mindfulness skills as alternatives to ineffective control strategies. Mindfulness of breathe, emotions, and eating exercises were completed in session, and participants were asked to practice these skills on their own. Mindfulness practice was important in helping participants to increase their awareness of the EE cycle, including situations that often preceded unwanted emotions and thoughts, the difficult thoughts and emotions themselves, the response to these internal experiences, and the consequences of those reactions. In addition, mindfulness practices helped participants to learn through experience that they were able to have their difficult internal experiences without having to either push them away or act on them.

The final stage of the treatment focused on assisting participants in clarifying their unique values and commit to engaging in activities that were consistent with those values. The goal of the current treatment was not only to help increase awareness of EE patterns and reduce the frequency of EE, but also to empower participants to pursue living effective lives. Participants were asked to identify important life domains (e.g., self-acceptance, relationships, education, civil rights activism, physical health) and how they would like to relate to themselves and others in these areas. One important value for both participants was personal growth and health. Within this domain, participants were introduced to the concept of self-compassion, which incorporates mindfulness, self-kindness, and common humanity (Neff, 2003). Therapists also helped participants identify potential barriers to their values-consistent goals and alternative approaches to problematic situations that still moved them in valued directions.

*Assessment of Progress*

Results for EE at the pre-treatment, mid-point, post-treatment, and 3-month follow-up phases of the study are presented in Table 3 and Figure 1. Other problematic eating behaviors and related outcome variables from pre-treatment, mid-point, post-treatment, and 3-month follow-up are presented in Table 2. The average number of EE episodes for participant 1 was approximately 8 per week during the pre-treatment baseline phase, and the intensity of urges to eat emotionally was 26, 29, and 16 for anger, anxiety, and depression, respectively. Although the frequency of EE episodes remained fairly unchanged within the first two weeks of the ACT intervention, it began to decrease by the third week of the intervention to 2.3 per week, and the reduction was maintained throughout the rest of the intervention period. The average number of EE episodes per week was 3.2 throughout the course of the 10-week ACT intervention, and the intensity of urges to eat during states of anger, anxiety, and depression decreased from pre-treatment to post-treatment (with a rating of 1 for each emotion).

The reduction in EE episodes paralleled improvement in body image flexibility. Her body image flexibility score at pre-treatment was 32, which was approximately two standard deviations below the mean of a non-clinical college sample (Sandoz et al., 2013). However, at the midpoint of treatment, the score increased to the average range of the non-clinical sample. The weekly average score of her body image flexibility was 68.7, which was slightly above the mean of a non-clinical college sample (see Figure 1).

The average number of EE episodes for participant 2 was approximately 10 per week during the pre-treatment phase, and the intensity of urges to eat during emotional states were 21 for anger, 10 for anxiety, and 13 for depression. During the first two weeks of the ACT intervention, the frequency of EE episodes had dropped to 6 per week, and it continued to decrease through the midpoint of the study to approximately 2 per week. This reduction was largely maintained throughout the rest of the intervention period. At post-treatment, the measure of urges to eat emotionally had decreased from pre-treatment levels to 13, 5, and 6 for anger, anxiety, and depression, respectively.

As with Participant 1, the reduction in EE episodes for Participant 2 corresponded with improvement in body image flexibility (see Figure 1). His body image flexibility score at pre-treatment was 38, well below the mean for a non-clinical college sample. By the midpoint of treatment, the score had increased to 59 and continued to improve to 61 at post-intervention. His scores on disordered eating related measures also suggested improvement in disordered eating concerns, including global disordered eating and general functioning (see Tables 2 and 3).

**8 Complicating Factors**

A major complicating factor for treatment for both participants was their schedules. Participant 1 was a graduate student, and she was busy with her required course work. Participant 2 was a full-time student who also had two part-time jobs. Additionally, as both participants reported other psychiatric concerns, the present ACT intervention not only covered EE and related eating pathology but other psychiatric concerns as well. More specifically, Participant 1 reported still grieving the loss of a family member, and Participant 2 endorsed comorbid social anxiety. There were no other notable complicating factors.

**9 Access and Barriers to Care**

Treatment was provided free of charge, so there were no financial constraints. There were also no issues with access to care because the treatment was offered at the university psychology clinic where both participants were students. Given the relatively short-term nature of the therapy, the present ACT intervention seems to be easily adapted to outpatient treatment setting for EE.

**10 Follow-up**

Participant 1 reported a total of 2 EE episodes during the one week period at 3-month follow-up. The intensity of urges to eat emotionally increased from post-treatment; however, the follow-up levels were still drastically decreased from pre-treatment scores, with a level of 10 for anger, 12 for anxiety, and 7 for depression.

Her body image flexibility also continued to improve throughout the course of the intervention, and the improvement was maintained at 3-month follow-up (see Figure 1). Her scores on disordered eating related measures also suggested improvement in disordered eating concerns, including global disordered eating and general functioning (see Tables 2 and 3). In addition, she no longer met criteria for BED at the end of the study.

Participant 2 reported a total of 2 EE episodes during the one week period prior to the 3-month follow-up. He reported that for the two months prior to the follow-up assessment he had regularly been practicing mindful eating and had not been engaging in EE even while experiencing school and work stress. However, the 3 weeks prior to the follow-up he had been engaging in EE in response to several stressful situations (e.g., pet dying, car accident, finals/presentations, and applying to graduate school). Unlike previous EE episodes in which he felt powerless over his urges to eat, he reported that even when engaging in EE during this time, it was more of a conscious choice to use food to cope with difficult emotions, and he did not view it as interfering with his life. The intensity of his urges to eat emotionally were similar to the post-treatment scores at the 3 month follow-up, with scores of 11, 5, and 5 for anger, anxiety, and depression, respectively.

As with Participant 1, Participant 2’s decrease in EE corresponded with improvements in body image flexibility, which was at 76 at 3-month follow-up, well above the mean score for non-clinical college students. His scores on disordered eating related measures also suggested improvement in disordered eating concerns, including global disordered eating and general functioning.

In summary, both participants experienced decreases in the frequency of their EE episodes throughout the course of the intervention, and these decreases were largely maintained at 3-month follow-up (see Table 3). The average number of EE episodes per week across the two participants at pre-treatment was 9, which decreased to an average of 2 per week by 3-month follow-up. The improvements were particularly significant for Participant 1, who no longer met criteria for BED at post-treatment and 3-month follow-up. Similarly, improvements in body image flexibility were observed across both participants throughout the course of study. At pre-treatment, the mean body image flexibility score was 35, which increased to 64 at mid-point and 76.5 at follow-up.

**11 Treatment Implications of the Cases**

These two cases provide preliminary evidence of the potential benefits of brief ACT for individuals with EE concerns. The results of the current study are also consistent with the emotion regulation literature related to disordered eating, which suggests that EE functions as a maladaptive coping strategy to escape or distract from difficult internal experiences (Hayaki, 2009; Polivy & Herman, 2002). A variety of ACT techniques were used to target these regulation strategies in order to decrease their impact on participants’ daily functioning. These ACT techniques also helped participants to choose to invest their time and energy into pursuing values-consistent living rather than trying to control uncomfortable thoughts and emotions.

The core features of ACT may be useful for treating EE because of the focus on improving general functioning and engagement with valued activities in addition to promoting alternative responses to distressing internal events. At follow-up, both participants reported that they enjoyed and benefited from focusing on valued living in addition to decreasing the frequency of EE. Specifically, Participant 1 reported that she appreciated focusing on promoting self-compassion and benefitted from learning skills for distancing from and relating to her difficult thoughts. Participant 2 reported that he enjoyed focusing on long-term goals and values, learning emotional awareness and acceptance (e.g., “learning to allow myself to feel emotions and breathe into them”), practicing mindful eating, and being able to talk about problem areas other than EE (e.g., relationship issues, anxiety, and guilt/shame surrounding substance abuse history).

**12 Recommendations to Clinicians and Students**

The current study suggests that ACT may be a useful way of conceptualizing disordered eating, like EE, by identifying the function of eating behavior and assessing to what degree it interferes with full, vital living. In addition, ACT may be useful in the treatment of individuals with problematic EE. Furthermore, focusing on more global valued living and learning to be open to uncomfortable internal experiences may be beneficial processes to target in the treatment of EE. Because disordered eating, including EE, is a prevalent problem among adolescents and adults, short-term, cost-effective treatments are important. While the results of the current study are promising, additional research is needed. Future research in this area should utilize a larger, more diverse sample and randomized controlled trials to investigate the efficacy of ACT for EE.

**Table 1**

**Participant Characteristics**

|  |  |  |
| --- | --- | --- |
| Participant | 1 | 2 |
| Sex | Female | Male |
| Age | 27 | 40 |
| Ethnicity/Nationality | White American | Mexican-American |
| Sexual Orientation | Homosexual | Homosexual |
| Pre-treatment BMI | 49.1 | 29.8 |
| Relationship Status | In a romantic relationship | Married |
| Occupation | Student | Student |

*Note*. BMI = Body Mass Index

Table 2

**Global Emotional Eating and Binge-Eating Episodes Throughout the Course of the ACT Intervention**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Average self-reported weekly EE | | |  |  | EDEQ-Global | | | | Times of eating unusually large amounts in past 28 days | | | | Time eating with the sense of having lost control over eating | | | | Days of such episodes in past 28 days | | | |
|  | Baseline  (2-3 wks) | | Treatment  (10 wks) | 3m F/U  (1 wk) | | | pre | mid | post | 3m F/U | pre | mid | post | 3m F/U | pre | mid | post | 3m  F/U | pre | mid | post | 3m  F/U |
| **P 1** | 8.33 | | 3.20 | 2.00 | | | 4.01 | 1.57 | 0.55 | 0.78 | 14 | 4 | 0 | 0 | 14 | 2 | 0 | 0 | 14 | 2 | 0 | 0 |
| **P 2** | 10 | | 2.90 | 2.00 | | | 4.24 | 2.83 | 1.59 | 1.2 | 12 | 3 | 2 | 3 | 6 | 2 | 2 | 2 | 6 | 2 | 2 | 3 |

*Note.* 3mF/U stands for 3-month follow-up.

a EDEQ-Global stands for Eating Disorder Examination-Questionnaire.

Table 3

**Disordered Eating Related Outcomes Throughout the Course of the ACT Intervention**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Diminished Functioning due to DE concerns (CIA)** | | | | **Emotional Eating: Anger**  **(EES)** | | | | **Emotional Eating: Anxiety**  **(EES)** | | | | **Emotional Eating: Depression** **(EES)** | | | |
|  | pre | mid | post | 3m F/U | pre | mid | post | 3m F/U | pre | mid | post | 3m F/U | pre | mid | post | 3m F/U |
| **P 1** | 23 | 8 | 2 | 4 | 26 | 5 | 1 | 10 | 29 | 10 | 1 | 12 | 16 | 6 | 1 | 7 |
| **P 2** | 31 | 8 | 9 | 5 | 21 | 16 | 13 | 11 | 10 | 10 | 5 | 5 | 13 | 7 | 6 | 5 |

*Note.*CIA stands for Clinical Impairment Assessment.

a DE stands for disordered eating.

b EES stands for Emotional Eating Scale.

Body Image Flexibility (dashed line)

Frequency of problematic eating behavior (solid line)

Days

Figure 1. Daily frequency of emotional eating and weekly body image flexibility in baseline, treatment, and follow-up phases.

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