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Outpatient Dialectical Behavior Therapy for Adolescents: Treatment Outcomes and Comparison of Treatment Effects in Two Skills Training Group Formats

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Outpatient Dialectical Behavior Therapy for Adolescents: Treatment Outcomes and Comparison of Treatment Effects in Two Skills Training Group Formats

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An abstract of
A dissertation submitted to the Faculty of the
James T. Laney School of Graduate Studies of Emory University
in partial fulfillment of the requirements for the degree of
Doctor of Philosophy
in Psychology
2016

Abstract

Outpatient Dialectical Behavior Therapy for Adolescents: Treatment Outcomes and Comparison of Treatment Effects in Two Skills Training Group Formats

By Colleen M. Cowperthwait

The current study is a pilot trial evaluating dialectical behavior therapy for adolescents (DBT-A) and comparing two formats of group skills training: parallel adolescent and parent groups (DBT-A/P), and multifamily group (DBT-A/MF). DBT-A was developed utilizing multifamily groups (Miller, Rathus, & Linehan, 2007; Miller, Rathus, Linehan, Wetzler, & Leigh, 1997), and the only RCT of DBT-A to date utilized that skills training format (Mehlum et al., 2014). There are no published outcome studies of DBT-A utilizing a parallel group format, and no studies comparing parallel and multifamily groups. Participants were 37 adolescents who participated in six months of outpatient DBT-A/MF or DBT-A/P, including individual DBT and skills training group. Adolescents were assessed on a number of self-report and interview-assessed variables before treatment, and again at six months after the start of DBT. Self-report variables were depression, borderline personality disorder (BPD), and emotion dysregulation symptoms, and DBT skills use. Interview-assessed behaviors were non-suicidal self-injury frequency and severity, and frequency of suicide attempts and psychiatric hospitalizations. Adolescents in both DBT-A/MF and DBT-A/P demonstrated significant improvements in self-reported symptoms of depression, BPD, and emotion dysregulation. Adolescents in DBT-A/MF did not significantly outperform adolescents in DBT-A/P on attendance or completion rates or any self-report or behavioral variable. Low treatment dropout rates suggest that both DBT-A/MF and DBT-A/P were well accepted by patients. These findings help establish the feasibility and acceptability of different DBT-A skills training group formats. A larger randomized trial is needed for further evaluation of DBT-A and comparison of skills training formats.

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TABLE OF CONTENTS

Dialectical Behavior Therapy (DBT) (Linehan, 1993a, 1993b, 2015a, 2015b) is an outpatient treatment originally developed for what Linehan called para-suicidal behavior. With the promulgation of Axis II disorders in DSM-III, Linehan suggested the program was best suited for chronically suicidal adults with borderline personality disorder (BPD). The goal of DBT is to help individuals regulate their emotions without engaging in ineffective behaviors, such as non-suicidal self-injury (NSSI) (Linehan, 1993a). DBT effectively reduces the frequency and severity of suicide attempts, suicidal ideation, and NSSI, and reduces hospitalizations and emergency room (ER) usage in adults with BPD (Lynch, Trost, Salsman, & Linehan, 2007).

NSSI behaviors are a significant concern among adolescents as well. Between 13% and 23% of adolescents in community samples report a lifetime history of engaging in NSSI, and between 5% and 10% of adolescents report engaging in NSSI during the past year (Hankin & Abela, 2011; Madge et al., 2008; Muehlenkamp, Claes, Havertape, & Plener, 2012). Although NSSI is distinct from suicide attempts, NSSI is highly correlated with suicide attempts and is a significant risk for completed suicide (Nock, Joiner Jr., Gordon, Lloyd-Richardson, & Prinstein, 2006). Only 10% to 20% of adolescents who have engaged in NSSI receive treatment at all (Ystgaard et al., 2009), and over 70% of adolescents who attempt suicide are noncompliant with outpatient treatment (Trautman, Stewart, & Morishima, 1993). Given that adolescents who have attempted suicide or engaged in NSSI are at high risk to attempt or complete suicide in the future and the unique developmental considerations of adolescent personality pathology in the context of family environments, the development and implementation of

effective outpatient treatments for self-injurious and suicidal adolescents and their families is critically important.

In light of these developmental and environmental considerations, DBT for adolescents was originally developed utilizing multifamily skills training groups (Miller et al., 2007; Miller et al., 1997). There are several adaptations of DBT for adolescent populations (Groves, Backer, van den Bosch, & Millar, 2012; Klein & Miller, 2011; MacPherson, Cheavens, & Fristad, 2012). Despite evidence for their effectiveness, however, there is little evidence regarding which of these adolescent DBT adaptations works best and why (Lynch, Chapman, Rosenthal, Kuo, & Linehan, 2006; MacPherson et al., 2012). Adolescents receiving DBT in the Child and Adolescent Mood Program (CAMP) at Emory University participated in the current study. The study sought to compare two formats of therapeutic skills training groups for the outpatient treatment of emotion dysregulation and mood difficulties.

Self-Harm, Suicide, and BPD

Suicide is currently the tenth leading cause of death in the United States; among adolescents ages 15 to 19 years old, suicide is the second leading cause of death (Heron, 2016). *Suicide attempts* may be defined as "direct efforts to intentionally end one's own life" (Nock et al., 2006, p. 65). Risk for suicide attempts is particularly high in the first week after psychiatric hospital admission and the first week after psychiatric hospital discharge (Qin & Nordentoft, 2005).

Suicide attempts are distinct from non-suicidal self-injury. *Non-suicidal self-injury* (NSSI) may be defined as "direct, deliberate destruction of one's own body tissue in the absence of intent to die" (Nock et al., 2006, p. 65). A substantial percentage of both

adults (over 20%) and adolescents (over 40%) hospitalized for mental health difficulties engage in NSSI (Nock & Prinstein, 2004). Individuals engage in NSSI as a way to regulate negative emotions, reduce tension, to communicate needs to others, or for social reinforcement (Nock & Prinstein, 2005). Although NSSI is distinct in form and function from suicide attempts, NSSI is highly correlated with suicide attempts and is a significant risk for completed suicide (Nock et al., 2006). Besides increased risk of accidental death by way of NSSI, there are several theories about why individuals who engage in NSSI are at an elevated risk for suicide attempts. It has been proposed that individuals who have a history of NSSI may experience an increase in negative reinforcement of NSSI over time, gain "practice" with suicidal behavior over time, and either do not experience or become habituated to fear and physical pain related to self-injury (Joiner Jr. et al., 2003; Nock et al., 2006). Given that suicide attempts and NSSI are distinct but also often co-occur, evaluation and treatment of both suicidal ideation and NSSI is critical (Nock et al., 2006). Although NSSI is associated with multiple internalizing, externalizing, substance use, and personality disorders in both adults and adolescents (Nock et al., 2006), chronic suicidality, NSSI, and emotion regulation difficulties are considered hallmark features of BPD.

The prevalence of BPD in the population is between 1 and 5%, but is as high as 10% in individuals seen in outpatient mental health clinics and 20% among psychiatric inpatient populations. Further, between 8 and 10% of individuals with BPD complete suicide (American Psychiatric Association, 2013). According to the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5), five of nine pervasive and enduring behavioral features are required for a diagnosis of BPD in adults: frantic efforts

to avoid abandonment, unstable and intense relationships, identity disturbance, dangerous impulsivity, suicidal or self-injurious behavior, affective instability, chronic feelings of emptiness, inappropriate anger or difficulty controlling anger, and transient paranoid ideation or dissociative symptoms (American Psychiatric Association, 2013).

Given this criterion-based method of diagnosis, two individuals who receive a diagnosis of BPD may overlap on only one of the diagnostic criteria. Therefore, BPD is a phenotypically heterogeneous disorder (Crowell, Beauchaine, & Linehan, 2009). Affective instability, in particular, may be a core feature of BPD and a central area of dysfunction that drives other BPD symptoms (Arens, Grabe, Spitzer, & Barnow, 2011; Ebner-Priemer et al., 2007; Linehan, 1993a). Linehan (1993a) conceptualized BPD as primarily a disorder of emotion dysregulation, with the other areas of dysregulation present in BPD as different aspects of emotional responding. With this perspective, Linehan (1993a) reorganized the BPD diagnostic criteria into areas of emotional (reactivity of mood, inappropriate or intense anger), behavioral (impulsivity, suicidal or self-injurious behavior), cognitive (identity disturbance, paranoid ideation or dissociation), and interpersonal (frantic efforts to avoid abandonment, unstable and intense relationships) dysregulation.

Given the extent of the high-risk behaviors (e.g., suicide, NSSI) and substantial comorbidities that most patients with BPD exhibit, treatment for BPD is complex and time- and resource-intensive. As such, relatively few comprehensive psychotherapeutic treatments for BPD exist. The most recent Cochrane Review (Stoffers et al., 2012), found seven treatments designed or adapted for BPD that had any research support: DBT, cognitive behavior therapy (Beck, Rush, Shaw, & Emery, 1979), dynamic deconstructive

therapy (Gregory et al., 2008), interpersonal psychotherapy (Klerman, Weissman, Rounsaville, & Chevron, 1984), mentalization-based therapy (Bateman & Fonagy, 2004), schema-focused therapy (Young, 1999), and transference-focused psychotherapy (Yeomans, Clarken, & Kernberg, 2002). This review concluded that, although evidence for psychotherapeutic treatments for BPD is scarce, DBT is the most robust psychological therapy for treating BPD and is effective in reducing suicide attempts and self-harm while improving general functioning (Stoffers et al., 2012).

Theories of Development of BPD and Mechanisms of Therapeutic Change in DBT

According to the biosocial theory of BPD (Linehan, 1993a), BPD does not arise solely from either genetic or psychosocial models of transmission. Rather, there is an interactional and transactional relationship between biological dysfunction in an individual's emotion regulation system and an invalidating environment. According to this theory, emotion dysregulation is characterized by increased baseline emotional sensitivity, increased reactivity to emotionally evocative stimuli, and a slow return to emotional baseline. The invalidating environment is defined as any environment that communicates that the individual's emotional experiences are wrong, too extreme, or unacceptable and are attributed to socially unacceptable characteristics or personality traits (e.g., "manipulative"). Behavioral dysfunctions arise when there is a poor fit between the temperamentally emotionally sensitive and reactive individual and the environment. The emotionally vulnerable individual and the individuals in the invalidating environment shape and reinforce extreme behaviors in each other. The invalidating environment provides insufficient modeling, coaching, and cheerleading of expressive behaviors, followed by either excessive punishment or intermittent

reinforcement of extreme expressive behaviors. Over time, this transaction, combined with deficits in the skills necessary to regulate emotions and tolerate emotional distress, may lead to maladaptive behaviors in an attempt to regulate negative affect and/or inhibit emotional responses (Courtney-Seidler, Klein, & Miller, 2013; Linehan, 1993a; Linehan & Dexter-Mazza, 2008).

This biosocial theory is closely tied to mechanisms of treatment and theory underlying therapeutic change in DBT (Linehan, 1993a, 1993b, 2015a, 2015b). DBT is an empirically well-supported multi-modal therapy based on dialectics, Zen philosophy, and behaviorism. At its core, DBT is a treatment that attempts to balance acceptance of the individual's emotional experience with problem solving and skills coaching to promote behavioral change. Acceptance-based strategies are primarily informed by Zen philosophy. Mindfulness practice teaches individuals with BPD to accept their current reality, even a painful reality, through mindful and non-judgmental participation in the present moment. Change-based interventions involve principles of behaviorism, including exposure, contingency management, behavioral chain analyses and solution analyses. DBT also includes cognitive-based procedures such as problem solving and cognitive restructuring. In practice, the emotionally dysregulated individual is taught to trust that his or her experiences are valid, label and experience emotions, modulate emotional arousal, tolerate distress, and decrease problematic behaviors and increase more effective behaviors (Harned, Banawan, & Lynch, 2006; Linehan, 1993a; Lynch et al., 2006).

DBT comprises a hierarchy of treatment targets and multiple modes of therapy. Treatment targets include first reducing life-threatening behaviors (e.g., suicidal, self-

injurious, homicidal, or assault behaviors), then reducing therapy-interfering behaviors (e.g., dropout, nonattendance, lateness, incomplete homework), reducing quality of life interfering behaviors (e.g., mood disorders, panic attacks, employment or school difficulties), and finally increasing behavioral skills. These targets are addressed in four modes of therapy: weekly individual therapy, weekly skills training group, as-needed telephone coaching, and weekly therapist consultation team meetings. The weekly skills training group is highly structured and focuses on teaching skills and increasing behavioral capabilities with the use of homework assignments to practice specific DBT skills. The individual therapist provides as-needed telephone coaching focused on helping patients acquire or strengthen skills during a crisis, generalize skills use, and/or repair the therapeutic relationship. Weekly therapist consultation team meetings provide support for therapists and aim to decrease therapist burnout, increase DBT treatment adherence, and promote effective skills use by DBT therapists (Linehan, 1993a; Linehan & Dexter-Mazza, 2008).

Weekly skills-training groups teach four overarching DBT skill sets: core mindfulness, interpersonal effectiveness, emotion regulation, and distress tolerance. These skills are developed to target emotional, behavioral, interpersonal, cognitive, and social dysregulation and skill deficits that are characteristic of individuals with BPD. *Core mindfulness skills* are psychological and behavioral versions of meditation skills usually taught in Eastern spiritual practices, including Zen. These skills are designed to target self-dysregulation, including identity disturbance or unstable self-image or sense of self, as well as reduce vulnerability to dissociation, paranoid thinking, and over-personalization (Lynch, Morse, Mendelson, & Robins, 2003). These skills are central to

all DBT skills and techniques and are emphasized during each skills-training group and re-taught in full before each of the other modules (Linehan, 1993a, 1993b, 2015a, 2015b; Linehan & Dexter-Mazza, 2008).

Interpersonal effectiveness skills emphasize assertively asking for something the individual needs or saying no to things that the individual does not want while maintaining positive relationships and maintaining self-respect. *Emotion regulation skills* emphasize behavioral strategies for reducing emotion dysregulation, including mindfully experiencing and labeling emotions, reducing vulnerability to negative emotions, increasing positive emotional experiences, and changing emotions when needed. *Distress tolerance skills* emphasize crisis survival and reality acceptance strategies. Crisis survival skills teach short-term strategies for tolerating painful life events without engaging in impulsive actions, such as self-harm and suicidal behaviors. Acceptance skills focus on radically accepting painful situations that are unlikely to change; the goal of radical acceptance is to reduce suffering (Linehan, 1993a, 1993b, 2015a, 2015b; Linehan & Dexter-Mazza, 2008).

Empirical Support for DBT in Adults

There have been a number of randomized controlled trials (RCTs), open trials, and quasi-experimental studies demonstrating the efficacy and effectiveness of DBT for the treatment of BPD in adults in both outpatient and inpatient settings. Across research groups, outpatient DBT has been shown to be more effective than treatment as usual (TAU) and waitlist control conditions in reducing frequency and severity of suicide attempts, suicidal ideation, and NSSI and number of inpatient psychiatric hospitalization days and ER visits (Lynch et al., 2007). DBT also has demonstrated improved treatment

compliance and psychological outcomes, including hopelessness, depression, anger, social adjustment, interpersonal functioning, and quality of life in both men and women with BPD (Koons et al., 2001; Linehan, Armstrong, Suarez, Allmon, & Heard, 1991; Linehan et al., 2006; Linehan, Tutek, Heard, & Armstrong, 1994; Pistorello, Fruzzetti, MacLane, Gallop, & Iverson, 2012; Turner, 2000; Verheul et al., 2003).

According to the biosocial theory of BPD (Linehan, 1993a), there is an interactional and transactional relationship between a biological dysfunction in an individual's emotion regulation system and an invalidating environment. Improved emotion regulation is the theorized mechanism of psychological change in DBT. There has been some evidence to support the role of improved emotion regulation on gains made in treatment (Valentine, Bankoff, Poulin, Reidler, & Pantalone, 2015). One study of outpatient DBT for adults with BPD and substance abuse showed improvements in self-reported emotion regulation over the course of treatment. Further, these improvements in emotion regulation were uniquely associated with reductions in behaviors (i.e., substance use) thought to serve an emotion regulatory function (Axelrod, Perepletchikova, Holtzman, & Sinha, 2011). Two small studies have utilized neuroimaging to demonstrate decreased amygdala activation to emotionally evocative pictures and improved amygdala habituation to repeated exposures to emotional pictures over the course of outpatient DBT (Goodman et al., 2014; Schnell & Herpertz, 2007). Taken together, these studies demonstrated preliminary evidence that DBT is associated with improved emotion regulation, and that improved self-reported emotion regulation over the course of treatment is associated with improvements in high target behaviors and changes in relevant neural systems.

Recent mediation analyses (Neacsiu, Rizvi, & Linehan, 2010), dismantling studies (Linehan et al., 2015), and RCTs (Neacsiu, Rizvi, & Linehan, 2010) provided preliminary support for the theory that maladaptive behaviors (i.e., self-harm, substance use) are evidence of skills deficits; individuals with BPD need training in order to acquire new behavioral skills. Post-hoc analyses of previous positive outcomes in RCTs (Linehan et al., 2006; Linehan et al., 2002; Linehan et al., 1999) of DBT for BPD indicated that the use of DBT skills fully mediated reductions in suicide attempts and depressive symptoms and increase in control over anger and partially mediated decreases in NSSI (Neacsiu, Rizvi, & Linehan, 2010). Further, one randomized trial conducted a comparison of standard DBT, DBT skills training without individual DBT, and individual DBT without skills training. Both standard DBT and DBT skills without individual DBT significantly outperformed individual DBT without skills training on NSSI frequency and depression and anxiety severity (Linehan et al., 2015). These results indicated that DBT skills training may drive reductions in maladaptive behaviors and improvements in emotion regulation in adults with BPD (Neacsiu et al., 2014).

Adaptations of DBT for Adolescent Populations

Although the diagnosis of personality disorders in adolescents is controversial (American Psychiatric Association, 2013; Westen, Shedler, Durrett, Glass, & Martens, 2003), retrospective reports of adults with BPD and prospective epidemiological studies of adolescent community and treatment samples suggest that characteristics of BPD are likely to be present in adolescents, regardless of whether full diagnostic criteria are met (Miller, Muehlenkamp, & Jacobson, 2008). Across personality disorder diagnoses, personality pathology in adolescents resembles personality pathology in adults (Westen et

al., 2003). Specifically, adolescents with BPD traits show many similarities with adults with BPD in terms of early life history, current suicidal, NSSI, impulsive behaviors, emotion dysregulation, and co-occurring psychiatric diagnoses (Fleischhaker et al., 2011; Miller et al., 2008). Further, adolescents who meet diagnostic criteria for personality disorders in adolescence are at a greater risk for psychopathology in adulthood (Westen et al., 2003). Adolescents are also situated within a family environment, in which parents and caregivers have more power than adolescents and are ongoing influences in adolescents' lives, but also may be invalidating and contribute to behavioral patterns associated with BPD (Miller, Glinski, Woodberry, Mitchell, & Indik, 2002; Woodberry, Miller, Glinski, Indik, & Mitchell, 2002).

Problematic personality pathology during adolescence may be treated, even when the pathology is not severe enough to warrant a current BPD diagnosis (Miller et al., 2008; Westen et al., 2003). Further, there are unique developmental considerations of adolescent personality pathology in the context of family environments (Miller et al., 2002). There are only three treatments for adolescent BPD that have been adapted for and studied in adolescent samples, DBT (Miller et al., 1997), mentalization-based therapy (Roussouw & Fonagy, 2012), and cognitive behavior therapy (Taylor et al., 2011). All three have demonstrated promising results for reductions in NSSI and depression symptoms.

Adult DBT has been adapted for treatment of adolescents with BPD diagnosis or features (MacPherson et al., 2012). DBT for adolescents (DBT-A) includes several adaptations: shortening the treatment from one year to six months; the development of three adolescent-family dialectical dilemmas; reducing the number of skills taught; the

addition of an adolescent-specific *Walking the Middle Path* skills module; an explicit focus on as-needed family sessions; and the inclusion of parents in multifamily skills training groups (Miller et al., 2002; Miller et al., 2007; Miller et al., 1997).

In standard DBT, "dialectical dilemmas" are defined as behavioral patterns characteristic of individuals with BPD in which individuals alternate between extreme behaviors in attempts to regulate emotion (Linehan, 1993a). In DBT-A, adolescent-family specific dialectical dilemmas are characteristic patterns of family interactions in which adolescents and their parents/caregivers alternate between behavioral extremes and become polarized. The three adolescent-specific dialectical dilemmas in DBT-A are excessive lenience versus authoritarian control, normalizing pathological behaviors versus pathologizing normative behaviors, and forcing autonomy versus fostering dependence (Rathus & Miller, 2000).

In DBT-A, the *Walking the Middle Path* module is taught in addition to the four modules from the original Linehan (1993b) manual. *Walking the Middle Path* emphasizes thinking dialectically to highlight the significance of multiple points of view, balancing acceptance and change, validation of self and others, and behavioral principles such as reinforcement of effective behaviors, shaping, and extinction of maladaptive behaviors (Miller et al., 2007; Miller et al., 1997; Rathus & Miller, 2000, 2002).

Parents are included in DBT-A in order to intervene simultaneously on individual and environmental factors that contribute to adolescent emotional and behavioral dysfunction (Woodberry et al., 2002). Individuals in the invalidating environment, particularly parents and caretakers, are taught to change the reinforcement and punishment contingencies for the emotionally dysregulated adolescent, as well as practice

nonjudgmental stance and acceptance of the adolescent (Miller et al., 2007; Miller et al., 1997). Direct intervention with the family provides opportunity for efficient intervention on the environment (Fruzzetti, Santisteban, & Hoffman, 2007; Miller et al., 2002). The addition of parents into multifamily skills training groups provides a common vocabulary for therapeutic techniques within families, enhances generalization of skills, models appropriate management of disruptive behaviors, and provides *in vivo* opportunities for parents to enhance validation, support, and effectiveness (MacPherson et al., 2012; Miller et al., 2007). Including multiple families offers a built-in support network and allows for feedback and skills practice across families (Rathus & Miller, 2014).

Empirical Support for DBT in Adolescents

One RCT (Mehlum et al., 2014) has been conducted to evaluate standard DBT-A for adolescents with BPD traits. This trial maintained fidelity with the Miller and Rathus model of DBT-A (Miller et al., 2007; Miller et al., 1997). Adolescents in both DBT-A and enhanced usual care (EUC) demonstrated mean reductions in suicidal ideation severity and self-harm frequency, self- and interviewer-rated depression, and borderline symptoms. However, DBT-A significantly outperformed EUC on outcomes of self-harm frequency, severity of suicidal ideation, and depressive symptoms (Mehlum et al., 2014). There are also a number of open (e.g., Courtney & Flament, 2015; James, Taylor, Winmill, & Alfoadari, 2008; Uliaszek, WIlson, Mayberry, Cox, & Maslar, 2014) and quasi-experimental trials (e.g., Fleischhaker et al., 2011; Rathus & Miller, 2002; Woodberry & Popenoe, 2008) comparing standard DBT-A to TAU. These studies demonstrated that DBT-A showed some promise for reductions in suicidal ideation, NSSI, BPD symptoms, depression, anxiety, and externalizing behavior in outpatient,

inpatient, and correctional settings (Katz, Cox, Gunasekara, & Miller, 2004; Rathus & Miller, 2002; Shelton, Kesten, Zhang, & Trestman, 2011; Trupin, Stewart, Beach, & Boesky, 2002). However, despite the hypothesized role of emotion regulation and skills training as mechanisms of therapeutic change in DBT, no study of DBT-A to date has examined changes in emotion regulation over the course of treatment or the importance of skills training on gains made in therapy (Valentine et al., 2015).

Standard DBT-A consists of individual therapy, coaching calls, therapist consultation team, as-needed family sessions, and six months of multifamily group skills training, and utilizes the adapted Miller et al. (1997; 2007) five module skills manual (Rathus & Miller, 2014). However, as with DBT for adults, DBT for adolescents is often modified and offered in non-standard formats in both research and clinical settings (Linehan et al., 2015; Nixon, McLagan, Landell, Carter, & Deshaw, 2004). There has been evidence of positive outcomes in DBT for adolescents using different skills training manuals, including both the original Linehan (1993b, 2015a) four module (McDonell et al., 2010; Sunseri, 2004), and the adapted Miller et al. (1997; 2007) five module manuals (Fleischhaker et al., 2011; Woodberry & Popenoe, 2008). There has been evidence of positive outcomes in DBT for adolescents with different models of group skills training, including adolescent-only skills training (Hjalmarsson, Kåver, Perseius, Cederberg, & Ghaderi, 2008; James et al., 2008; James, Winmill, Anderson, & Alfoadari, 2011) and separate adolescent- and parent-only DBT skills training groups that met with different frequencies and used different curricula (Nixon et al., 2004). Across research groups, these trials demonstrated that DBT for adolescents was associated with significant reductions in suicidal ideation, depression, anxiety, BPD symptoms, overall psychiatric

symptoms, and functional impairment. Despite Miller et al. (2007) allowing for parallel skills groups, there are currently no published outcome studies of this parallel group model of skills training nor are there studies comparing parallel skills groups with the standard multifamily skills group format. Thus, it is not currently known if modifications to the group format of DBT for adolescents have differential effects on treatment outcomes.

Aims and Hypotheses of Current Study

The CAMP DBT program is a comprehensive outpatient DBT program that offers two different skills training group formats: adolescents and their families are assigned to either parallel skills training (DBT-A/P) or to multifamily skills training (DBT-A/MF). Parents and adolescents are taught the same skills at the same time, utilizing the Miller et al. (1997; 2007) five-module skills training manual developed for outpatient DBT for adolescents. The CAMP DBT program also collects self-report and interview measures as part of standard clinical practice, providing naturalistic outcome data.

DBT is often shortened or modified on the basis of resources or characteristics of the clinic where the treatment is provided (Linehan et al., 2015; Nixon et al., 2004). However, it is not currently known whether adaptations specifically to the format of the DBT-A skills training group have differential effects on acceptability of the treatment, treatment compliance, skills acquisition, or psychiatric symptoms among adolescents. Further, although emotion regulation has been hypothesized as a mediator of patient change in DBT (Lynch et al., 2006), few studies of either adult or adolescent DBT have examined changes in emotion regulation and the impact of those changes on treatment outcomes. Therefore, the aims of the current study were twofold. First, the study

evaluated the effectiveness of implementation of DBT-A in our program and evaluated differential outcome effects of two DBT-A skills training group formats: parallel and multifamily. The second aim of the current study was to examine the contribution of improved emotion regulation on reductions in self-report symptoms and target behaviors.

It was hypothesized that treatment completion in both groups would be associated with significant decreases in self-report and interview-assessed variables. Self-report variables were depression, BPD, and emotion dysregulation symptoms, and DBT skills use. Interview-assessed behaviors were non-suicidal self-injury frequency and severity, and frequency of suicide attempts and psychiatric hospitalizations. It was also hypothesized that treatment attendance and completion, self-report variable, and interview-assessed behavior improvements for adolescents would be greater in the multifamily versus parallel skills training group format. Finally, it was hypothesized that improvements in emotion regulation would be associated with decreases in borderline symptomatology and high target behaviors.

Method

Inclusion and Exclusion Criteria

CAMP DBT-A program and study inclusion criteria were age between 13 and 17 years, current symptoms of serious emotion dysregulation including NSSI, chronic suicidal ideation, history of suicide attempt(s), severe mood swings, multiple comorbid clinical diagnoses, and/or symptoms of BPD, and at least one parent or caretaker to attend skills-training group. There was no requirement for a specific diagnosis for inclusion. Program and study exclusion criteria were suicidality requiring hospitalization, or a

primary diagnosis of substance dependence, psychosis, conduct disorder, or pervasive developmental disorder. There were no exclusion criteria based on medications.

Participants

Data were collected for 37 adolescents participating in the CAMP DBT-A program between May 2013 and June 2015. Demographic information for all participants is displayed in Table 1. Participants ranged in age from 13 to 17 years (M = 15.8 years, SD = 1.1); most were female (94.6%) and identified as Caucasian (83.4%). Most (81.1%) adolescents met criteria for either a mood or anxiety disorder. There were no significant differences between treatment groups on any demographic variable at baseline.

Measures[1]

All interviews and measures used in these analyses were collected as part of standard clinical practice in the DBT program.

Beck Depression Inventory – 2nd edition (BDI-II). The BDI-II is a 21 item self-report questionnaire that assesses the severity of affective, motivational, cognitive, and somatic symptoms of depression over the past week. Higher scores indicate more severe depressive symptoms; scores above 20 indicate moderate depression and scores above 29 indicate severe depression. The BDI-II has demonstrated strong internal consistency (α = 0.92), test-retest reliability (one-week reliability of 0.93), and construct validity for adolescents and young adults (Beck, Steer, & Brown, 1996; Steer, Ball, Ranieri, & Beck, 1997; Steer, Kumar, Ranieri, & Beck, 1998).

Borderline Symptom List-23 (BSL-23). The BSL-23 consists of 23 items that assess borderline symptomatology (e.g., self-destruction, loneliness, hostility) that are

[1] Families included in the current analyses completed additional measures above and beyond those analyzed in this paper as part of standard clinical practice in the DBT program.

rated from 0 (“not at all”) to 4 (“very much so”). Higher scores indicate more severe symptoms. Although clinical cut-off scores have not been established, the BSL-23 successfully discriminates individuals with BPD from other patient groups (Bohus et al., 2009). The BSL-23 has demonstrated good one-week test-retest reliability (r = .84), good internal consistency (mean coefficient α = .97), and good convergent validity (Bohus et al., 2009; Bohus et al., 2007). The BSL-23 has been utilized to measure change in BPD symptoms in both adult (e.g., Schnell & Herpertz, 2007) and adolescent (Matulis, Resick, Rosner, & Steil, 2013) treatment outcome studies.

Difficulties in Emotion Regulation Scale (DERS). The DERS is a 36-item self-report questionnaire measuring an individual’s typical levels of difficulties with emotion dysregulation across various domains (Gratz & Roemer, 2004). Clinical cut-off scores and normative data have not been published. The DERS has demonstrated high internal consistency (α = 0.93, α > 0.80 for each subscale), test-retest reliability (eight week reliabilities range from 0.57 to 0.89 for all subscales), and convergent, construct and predictive validity of behavioral outcomes associated with emotion dysregulation in both adults and adolescents (Neumann, van Lier, Gratz, & Koot, 2010; Weinberg & Klonsky, 2009).

DBT-Ways of Coping Checklist (DBT-WCCL). The DBT-WCCL is a 59-item self-report measure created to study skills use as an outcome or mediator of treatment outcomes. It comprises two factors, one assessing coping with DBT skills and the other coping via dysfunctional means. All items are rated from 0 (“never use”) to 3 (“always use”). Skills use and dysfunctional coping indices are computed by averaging across all items in the scale (Neacsiu, Rizvi, Vitaliano, Lynch, & Linehan, 2010). Clinical cut-off

scores and normative data have not been published. The DBT-WCCL has demonstrated high internal consistency ($\alpha > 0.87$ for each factor), test-retest reliability (four month reliability range from 0.66 to 0.73 for the DBT Skills Subscale), and content validity.

Functional Assessment of Behavioral Manifestations of Emotion Dysregulation (FABMED). The FABMED is a semi-structured interview designed to provide a quantitative assessment of suicide attempts, hospitalizations, and NSSI. Frequency and severity of NSSI is assessed by rating scale. NSSI frequency is assessed on a weekly basis using a 0 to 4 scale, where "0" indicates that no NSSI occurred that week, "1" indicates one NSSI event that week, "2" indicates two to six NSSI events that week, "3" indicates daily NSSI, and "4" indicates multiple NSSI events a day or more than one day with at least three NSSI incidents. NSSI severity assessed for the most serious NSSI act for the week, and is also assessed on a 0 to 4 scale, where "0" indicates that no NSSI occurred that week, "1" indicates NSSI that involves relatively minor acts, "2" indicates serious NSSI, "3" indicates very serious NSSI requiring medical attention, and "4" indicates NSSI that potentially could have been fatal. Frequency of suicide attempts and hospitalizations were gathered as counts of attempts and hospitalizations (Ritschel, Sheppard, Ramirez, & Lloyd-Richardson, unpublished measure). Baseline FABMED assessed behavior in the six months prior to treatment up until the start of treatment. End of treatment FABMED assessed behavior from the start of treatment until six months after the start of DBT. The FABMED is conducted by a trained research coordinator who is not the adolescent's individual therapist or group leader/co-leader. In previous evaluations of the FABMED in the CAMP DBT program, the FABMED demonstrated high inter-rater reliability for categorical (hospitalizations, suicide

attempts) and continuous data (Cohen's kappa = 0.92, intraclass correlation coefficient = 0.91) (Ritschel, Ramirez, & Sheppard, unpublished manuscript; Ritschel et al., unpublished measure).

Attendance and completion rate. Attendance was tracked for both individual therapy and group, and this information was reported at weekly consultation team meetings. Each adolescent was given a dichotomous rating of *yes* or *no* for treatment completion based on whether they completed the minimum six months of both individual therapy and skills training group. There was no fixed number of sessions that adolescents must attend in order to be considered a treatment completer. Consistent with standard DBT guidelines, any patient who missed four individual therapy or group skills training sessions in a row was considered a treatment drop; inconsistent attendance was addressed by the group leaders and individual therapist as therapy interfering behavior, before the patient was terminated from treatment (see Linehan 1993a, 1993b).

Procedure

Consent and assent to treatment were obtained from legal guardians and adolescents before any interviews, measures, or therapy were initiated. All therapy and assessments were conducted at CAMP. Patients who were referred to or expressed interest in the DBT program participated in a one-hour orientation session with a DBT-trained therapist; both the adolescent and primary caregivers were included in the orientation session. This face-to-face orientation session insured that adolescents' symptom status and treatment needs were a good fit for the DBT program. It also provided the adolescents and caregivers adequate information to make an informed decision about treatment. Those who were unwilling to commit to six months of

treatment or met exclusion criteria were referred elsewhere for treatment.

After the orientation session, the therapist who conducted the orientation presented the case to the DBT consultation team and a decision was made whether or not to accept the adolescent into the DBT program. All adolescents accepted into the DBT program were required to make a six-month commitment to treatment, including weekly skills training groups for adolescents and caregivers (90 minutes), weekly individual therapy for the adolescents (50 minutes), and as-needed telephone coaching.

Adolescents who were accepted into the program were then scheduled for their baseline FABMED and assigned to an individual therapist. Following an initial clinical (i.e., non-structured) interview, the individual therapist assigned a primary diagnosis. Based on the next available opening and scheduling constraints of the family, adolescents and their caregivers were assigned to either weekly multifamily skills training group (DBT-A/MF) or two separate skills training groups–one for adolescents and one for caregivers (DBT-A/P). This assignment was not random; however patients and caregivers could not select which of the modalities they preferred. Adolescents and caregivers in both groups utilized the same DBT-A skills training workbook[2].

Self-report questionnaires were given at baseline and six months after the start of DBT. DBT skills training groups were implemented in a minimum of six months, and both adolescents and their caregivers had the option to continue attending the skills training group after the first six months. Results are reported for the first six months of treatment, regardless of whether the adolescent left the program after completing six

[2] As a professional courtesy, Rathus and Miller and provided the CAMP DBT program with the five-module DBT-A handouts and worksheets prior to publication of the *DBT Skills Manual for Adolescents* (Rathus & Miller, 2014). These unpublished materials were similar to the materials in the published skills manual. The CAMP DBT program switched from using the unpublished materials to using the published skills manual in skills training groups in January 2015.

months of skills training group or elected to continue treatment. All individuals who dropped out of treatment were included in baseline data analyses. The Emory Institutional Review Board approved the use of the data analyzed in this study.

Therapists in the CAMP DBT-A program (n = 13) were primarily female (84.6%). A majority of therapists was doctoral students in training (53.8%), followed by licensed psychologists (38.5%), and postdoctoral fellows (7.7%). All therapists were required to complete an intensive training course, read a list of foundational DBT materials[3] and attend weekly consultation team meetings. Video recordings were made for all DBT individual therapy sessions and skills training groups. Weekly consultation team (90 minutes) was the primary check on treatment adherence. In addition to consultation team, all trainees were required to attend weekly supervision from a licensed clinician. Leaders of skills training groups rotated every six months.

Data Analysis

The two treatment groups were compared on baseline variables using independent samples t tests for continuous data; categorical data were analyzed by use of Chi-square and Fisher's exact tests.

One component of this study examined the implementation and effectiveness of DBT-A in the CAMP DBT program. In order to examine whether treatment completion was associated with improvements in self-report outcomes and high target behaviors, two repeated-measures multivariate analyses of variance (RM MANOVA) with time as a within-subject factor (baseline, end of treatment) were conducted: one examining the

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[3] All therapists on the CAMP DBT team are required to read both texts by Marsha Linehan (1993a, 1993b) and the DBT-A text (Miller et al., 2007).

effects of DBT-A on self-report variables (BDI-II, BSL-23, DERS, DBT-WCCL-Skills, DBT-WCCL-Dysfunctional Coping) and the other examining the effects of DBT-A on interview outcomes (NSSI Frequency, NSSI Severity, Suicide Attempts, Hospitalizations). Significant omnibus RM MANOVA tests were followed with within-subjects analyses of variance (ANOVA) for each of the outcome measures. Within-group changes for binary variables (i.e., "hospitalized in six months pre-treatment" compared to "hospitalized in six months during treatment") were examined by McNemar's test.

A second component of this study is a comparison of implementation and effectiveness of DBT-A/MF and DBT-A/P. In order to examine the hypothesis that improvements in self-report outcomes and high target behaviors were greater in DBT-A/MF than in DBT-A/P, two repeated-measures multivariate analyses of variance (RM MANOVA) with time as a within-subject factor (baseline, end of treatment) and group (DBT-A/MF, DBT-A/P) as a between-subjects factor were conducted: one comparing groups on self-report variables, and the other comparing groups on interview outcomes. Significant omnibus RM MANOVA tests were followed with within-subjects analyses of variance (ANOVA) for each of the outcome measures.

The final component of this study is to examine the contributions of improved emotion regulation on treatment outcomes. To examine the contribution of improved emotion regulation on reductions in self-report symptoms and target behaviors, significant within-subjects ANOVA were followed by within-subjects ANOVA with change in DERS entered as a covariate.

In all MANOVA and ANOVA in which the assumption of sphericity were violated, Greenhouse–Geisser corrections were used. In addition to *p* values, Cohen's *d*

effect sizes and partial eta-squared values (η_p^2) are reported for all analyses to provide a standardized estimate of treatment effect. Cohen's *d* scores of 0.20, 0.50, and 0.80 represent small, medium, and large effect sizes, respectively (Cohen, 1992). Partial-eta squared values of 0.04, 0.25, and 0.64 represent small, medium, and large effect sizes, respectively (Ferguson, 2009).

Results

Sample Characteristics

Baseline behavioral and self-report data for the intent-to-treat sample (DBT-A/MF: *n* = 17; DBT-A/P: *n* = 20) are displayed in Table 1. Participants endorsed a history of high levels of Stage 1 (i.e., suicide attempts, NSSI) target behaviors at baseline. Most (91.9%) had engaged in NSSI at least once in their lives, and 83.3% had engaged in NSSI in the six months immediately preceding treatment. Almost half (47.2%) had attempted suicide at least once. Of those who had attempted suicide at least once, 47.1% had made multiple attempts (*M* = 2.06, *SD* = 1.48, range = 1-6). Most (52.8%) had been hospitalized on an inpatient psychiatric unit at least once. Of those who had been hospitalized at least once, 88.2% reported repeated hospitalizations (*M* = 2.2, *SD* = 1.9, range = 1-8). There were no significant differences between treatment groups on any self-report variable or interview-assessed behavior at baseline.

Implementation and Effectiveness of DBT-A in Total Sample

Treatment attendance and completion. Treatment dropout and attendance rates are shown in Table 2. Of the 37 adolescents who entered the program, 31 (83.8%) completed six months of treatment. Adolescents who did not complete six months of DBT-A did not differ from adolescents who did complete treatment on any baseline

variable (all *p*s > .30). Among adolescents who completed six months of DBT-A, attendance in group (82.5%) and individual therapy sessions (79.4%) was high.

Self-report outcomes. Means and standard deviations for treatment completers are shown in Table 3. There was a statistically significant effect of DBT-A treatment on adolescent self-report outcomes ($F(5,17) = 7.22$, $p = .001$, $\eta_p^2 = .68$). Follow-up univariate analyses were conducted separately for each of the self-report measures, and are shown in Table 4. Adolescents who completed six months of DBT-A self-reported significant reductions in depressive symptoms (BDI-II: $F(1, 22) = 18.68$, $p < .001$, $\eta_p^2 = .46$), borderline symptoms (BSL: $F(1, 22) = 18.12$, $p < .001$, $\eta_p^2 = .45$), emotion dysregulation (DERS: $F(1, 21) = 18.11$, $p < .001$, $\eta_p^2 = .46$), and use of dysfunctional means of coping (DBT WCCL-Dys: $F(1, 21) = 26.99$, $p < .001$, $\eta_p^2 = .56$), and improvements in use of DBT skills (DBT WCCL-Skills: $F(1, 21) = 4.82$, $p = .04$, $\eta_p^2 = .19$).

Behavioral outcomes. Means and standard deviations for treatment completers are shown in Table 3. There was a statistically significant effect of DBT-A treatment on behavioral outcomes, as assessed by FABMED interview ($F(4,23) = 3.56$, $p = .02$, $\eta_p^2 = .38$). Follow-up univariate analyses were conducted separately for each of the high target behaviors and are shown in Table 4. Adolescents who completed DBT-A had statistically significantly fewer suicide attempts while in treatment than in the six months before treatment ($F(1,27) = 14.54$, $p = .001$, $\eta_p^2 = .35$). There was no significant effect of treatment on NSSI frequency ($F(1,27) = 1.72$, $p = .20$, $\eta_p^2 = .06$) or severity ($F(1,27) = 0.28$, $p = .60$, $\eta_p^2 = .01$) or number of inpatient psychiatric hospitalizations while in treatment compared to in the six months before treatment ($F(1,27) = 1.95$, $p = .17$, $\eta_p^2 =$

.07).

Exact McNemar's tests determined there was a statistically significant difference in the proportion of adolescents who engaged in NSSI in the six months pre-treatment than in the six months during treatment ($p = .03$). Fewer adolescents engaged in NSSI during treatment (60.7%) than before (83.3%) before treatment. Similarly, there was a statistically significant difference in the proportion of adolescents who were hospitalized in the six months pre-treatment than in the six months during treatment ($p = .02$). Fewer adolescents were hospitalized during treatment (13.8%) than in the six months before treatment (43.3%). There were zero suicide attempts or completed suicides during treatment.

Contribution of improved emotion regulation on treatment outcomes. To examine the contribution of improved emotion regulation on the reduction in BPD symptoms, as measured by the BSL-23, a repeated measures ANOVA was calculated with change in DERS entered as a covariate. A significant interaction was observed between reduction in BPD symptoms and improved emotion regulation ($F(1,20) = 13.24$, $p = .002$, $\eta_p^2 = .40$), with changes in BPD symptoms losing significance when controlling for improvement in emotion regulation ($F(1,20) = 2.08$, $p = .17$, $\eta_p^2 = .09$). As there was no significant within-subjects effect of treatment on NSSI frequency or severity, additional analyses examining the role of improved emotion regulation on these treatment outcomes were not conducted.

Comparison of Implementation and Effectiveness of DBT-A/MF and DBT-A/P

Treatment attendance and completion. Treatment dropout and attendance rates are shown in Table 2. Completion rates in DBT-A/MF (76.5%) were lower than in DBT-

A/P (90.0%). However, this difference in percentage of adolescents who completed DBT-A in each group was not statistically significant (Fisher's exact $p = .30$). There was no significant difference in number of weeks to treatment dropout between groups (DBT-A/MF: $M = 14.5$, SD = 7.8, DBT-A/P: $M = 11.5$, SD = 6.0, $t(4) = -0.53$, $p = .62$, $d = -0.53$). Among adolescents who completed six months of DBT-A, there was no significant difference between DBT-A/MF and DBT-A/P for number (DBT-A/MF: $M = 21.2$, SD = 4.5, DBT-A/P: $M = 21.9$, SD = 2.7, $t(29) = -0.55$, $p = .59$ $d = -0.20$) or percentage of skills training groups attended (DBT-A/MF: $M = 80.8$, SD = 9.9, DBT-A/P: $M = 82.7$, SD = 8.6, $t(29) = 0.16$, $p = .88$, $d = 0.06$). There was also no significant difference between DBT-A/MF and DBT-A/P for number (DBT-A/MF: $M = 17.5$, SD = 6.3, DBT-A/P: $M = 17.7$, SD = 3.2, $t(29) = -0.12$ $p = .91$, $d = -0.04$) or percentage of individual therapy sessions attended (DBT-A/MF: $M = 80.8$, SD = 11.2, DBT-A/P: $M = 78.4$, SD = 9.2, $t(29) = 0.65$, $p = .52$, $d = 0.24$).

Self-report outcomes. Means and standard deviations for treatment completers are shown in Table 3. There was no significant between-subjects effect of group membership on improvements on self-report outcomes ($F(5,16) = 0.52$, $p = .75$, $\eta_p^2 = .14$), so follow-up univariate analyses for each of the self-report outcomes were not conducted.

When analyzed independently, both DBT-A/MF and DBT-A/P were associated with marginally significant improvements on self-report outcomes (DBT-A/MF: $F(5,6) = 3.81$, $p = .07$, $\eta_p^2 = .76$; DBT-A/P: $F(5,6) = 4.12$, $p = .06$, $\eta_p^2 = .78$). Follow-up univariate analyses were conducted separately for each of the self-report measures for each of the groups, and are shown in Table 5.

Adolescents who completed six months of DBT-A/MF self-reported significant reductions in depressive symptoms (BDI-II: $F(1, 10) = 9.95$, $p = .01$, $\eta_p^2 = .50$), borderline symptoms (BSL: $F(1, 10) = 12.66$, $p = .01$, $\eta_p^2 = .56$), emotion dysregulation (DERS: $F(1, 10) = 12.70$, $p = .01$, $\eta_p^2 = .56$), and use of dysfunctional means of coping (DBT WCCL-Dys: $F(1, 10) = 7.39$, $p = .02$, $\eta_p^2 = .43$). Adolescents who completed DBT-A/MF did not report significant improvements in use of DBT skills (DBT WCCL-Skills: $F(1, 10) = 1.42$, $p = .26$, $\eta_p^2 = .12$).

Adolescents who completed six months of DBT-A/P self-reported significant reductions in depressive symptoms (BDI-II: $F(1, 11) = 8.21$, $p = .02$, $\eta_p^2 = .43$), borderline symptoms (BSL: $F(1, 11) = 6.04$, $p = .03$, $\eta_p^2 = .36$), emotion dysregulation (DERS: $F(1, 10) = 6.87$, $p = .03$, $\eta_p^2 = .41$), and use of dysfunctional means of coping (DBT WCCL-Dys: $F(1, 11) = 15.33$, $p = .02$, $\eta_p^2 = .58$), and marginally significant improvements in use of DBT skills (DBT WCCL-Skills: $F(1, 11) = 4.62$, $p = .06$, $\eta_p^2 = .32$).

Behavioral outcomes. Means and standard deviations for treatment completers are shown in Table 3. There was no significant between-subjects effect of group membership on behavioral outcomes ($F(4,23) = .80$, $p = .54$, $\eta_p^2 = .12$). When analyzed independently, neither DBT-A/MF nor DBT-A/P was associated with significant improvements on behavioral outcomes, as assessed by FABMED interview (DBT-A/MF: $F(4,7) = 2.17$, $p = .17$, $\eta_p^2 = .55$; DBT-A/P: $F(4,13) = 1.89$, $p = .17$, $\eta_p^2 = .37$). As there was no significant between-subjects effect of group on behavioral outcomes and neither group was associated with significant improvement on behavioral outcomes, follow-up univariate analyses for each of the high target behaviors were not conducted.

Contribution of improved emotion regulation on treatment outcomes. To examine the contribution of improved emotion regulation on the reduction in BPD symptoms, as measured by the BSL-23, in each treatment group, two repeated measures ANOVA, one for DBT-A/MF and another for DBT-A/P, were calculated with change in DERS entered as a covariate. In DBT-A/MF, a significant interaction was observed between reduction in BPD symptoms and improved emotion regulation ($F(1,9) = 17.26$, $p = .002$, $\eta_p^2 = .66$), with changes in BPD symptoms no longer showing significance when controlling for improvement in emotion regulation ($F(1,9) = 0.52$, $p = .49$, $\eta_p^2 = .04$). The same interaction between reduction in BPD symptoms and improved emotion regulation was not observed in DBT-A/P ($F(1,9) = 1.18$, $p = .22$, $\eta_p^2 = .16$). As there was no significant within-subjects effect of treatment on NSSI frequency or severity, additional analyses examining the role of improved emotion regulation on these treatment outcomes were not conducted.

Discussion

This pilot naturalistic effectiveness study provides an evaluation of implementation of DBT-A in an outpatient clinic and a preliminary comparison of DBT-A with a multifamily skills group format (DBT-A/MF) and DBT-A with a parallel skills group format (DBT-A/P) in a sample of emotionally dysregulated adolescents. This is both the first study to systematically measure outcomes of adolescent DBT using a parallel group model and the first study to compare treatment outcomes of full-package adolescent DBT programs using different group formats. It was hypothesized that self-report symptoms and high target behaviors would improve over six months of treatment, improvements would be greater in DBT-A/MF than in DBT-A/P, and improvements in

emotion regulation would be associated with decreases in borderline symptomatology and high target behaviors.

Hypothesis 1, that treatment completion in both groups would be associated with significant improvements in all outcome measures, including significant increases in DBT skills use and significant decreases in adolescent depression and borderline symptomatology, emotion dysregulation, use of dysfunctional means of coping, and high target behaviors was partially supported. In particular, all self-report symptom treatment targets, including depression, borderline personality disorder, and emotion dysregulation, changed significantly over the course of six months of treatment. These changes were associated with moderate effect sizes. There was a significant increase in DBT skills use and a significant decrease in the use of dysfunctional coping, as measured by the DBT-WCCL.

We found no significant effect of treatment on NSSI severity or frequency or psychiatric hospitalizations. The null finding regarding NSSI frequency and severity is surprising, and is contrary to most other findings in the DBT-A literature (e.g., Courtney & Flament, 2015; Fleischhaker et al., 2011; Hjalmarsson et al., 2008; James et al., 2011; Rathus & Miller, 2002; Tørmoen et al., 2014; Woodberry & Popenoe, 2008). One possible explanation for this finding is that the FABMED rating scale for NSSI frequency and hospitalizations created an artificial floor on our data and was not sensitive to change. The mean pre-treatment NSSI frequency rating was 0.4 and post-treatment was 0.3, indicating that adolescents in our study reported engaging in self-harm less than once per week. A similar floor effect was observed with hospitalization. The mean number of hospitalizations in the six months before treatment was 0.6 and mean number of

hospitalizations during treatment was 0.3, indicating that hospitalization before and during treatment was a rare occurrence. However, when NSSI and hospitalization frequency were assessed as proportions of adolescents who engaged in the behavior, we found a significant reduction in the proportion of participants who engaged in NSSI and were hospitalized pre- to post-treatment. This method of assessment of NSSI behavior has been used in other outcome studies of DBT-A (e.g., Courtney & Flament, 2015; Tørmoen et al., 2014).

We found a dramatic reduction of suicidal behavior during therapy. Nearly half (40.0%) of treatment completers in this study had attempted suicide in the six months before treatment, with three adolescents attempting more than once during that assessed period. There were zero suicide attempts during treatment. This finding is particularly notable. Suicide is the second leading cause of death among adolescents ages 15 to 19 years old in the United States (Heron, 2016). Up to 50% of adolescents who attempt suicide will attempt suicide again in the future, and over 10% of those will actually die by suicide (Fleischhaker, Böhme, Sixt, Brück, Schneider, & Schulz, 2011). Of adolescents who attempt suicide and receive follow-up mental health care, up to 77% are noncompliant with outpatient treatment, including being more likely than other adolescent outpatients to not attend outpatient psychiatric appointments regularly and prematurely drop out of treatment (Trautman et al., 1993).

Without a waitlist or control condition, it is not possible to determine whether the reduction in suicidal behavior and re-hospitalizations in this study can be attributed to treatment. Further, it is difficult to determine the natural course of suicidal and self-harm behavior in untreated adolescents because, for ethical reasons, researchers have been

reluctant to conduct experimental or longitudinal research on suicidal individuals due to the concern about risk for completed suicide (Brent et al., 2009). Research on adolescents hospitalized for either NSSI or suicide attempts indicates that the first year after hospitalization is a particularly high risk period for reattempts and re-hospitalization. Longitudinal analyses of adolescents recently discharged from the hospital report that 7 to 12% will attempt suicide within six months of hospital discharge (Brent et al., 2009; Brent et al., 1993; Goldston et al., 1999). Those adolescents who have multiple suicide attempts are two to three times more likely than those with one attempt to attempt suicide again within the first year after hospital discharge (Goldston et al., 1999; Hultén et al., 2001). Suicide intent increases and time between suicide attempts decreases as a function of number of attempts, indicating a cycle of escalating suicidal behavior (Goldston et al., 2015). However, the risk for reattempts and re-hospitalizations was lower in this sample than in adolescent samples that did not receive DBT-A (Brent et al., 2009; Brent et al., 1993; Goldston et al., 2015; Goldston et al., 1999; Hultén et al., 2001), suggesting reductions in suicidal behavior and low rates of re-hospitalization are attributable to DBT-A. Results from this study lend additional support to existing studies (e.g., Courtney & Flament, 2015; Fleischhaker et al., 2011; Rathus & Miller, 2002; Tørmoen et al., 2014; Woodberry & Popenoe, 2008) that have demonstrated that DBT-A is an effective outpatient treatment that keeps adolescents engaged in treatment and interrupts escalating suicidal behavior.

In addition to contributing to the literature about the effectiveness of DBT-A, this study contributes to efforts to understand the relationship between improved emotion regulation and improved symptomatic and behavioral outcomes observed in DBT. To our

knowledge, this is the first study of DBT-A to systematically collect self-report measures of emotion dysregulation (DERS) and DBT skills use (DBT-WCCL). Previous DBT studies in adults have demonstrated improvements in emotion regulation, and shown that improvements in emotion regulation are significantly related to changes in other psychological and behavioral variables (e.g., Axelrod et al., 2011). Other DBT studies in adults have demonstrated that improvements in self-reported DBT skill use may drive reductions in maladaptive behaviors and improvements in depressive symptoms and emotion regulation in adults with BPD (Linehan et al., 2015; Neacsiu et al., 2014). However, similar findings have not yet been reported in DBT studies in adolescents.

Findings from this study also help establish the feasibility and acceptability of implementing DBT-A and collecting pre-/post-treatment data in an outpatient treatment setting with clinically referred and heterogeneous adolescents. DBT is a complex, resource-demanding treatment to implement (Linehan et al., 2015). Findings from this study, however, demonstrate that comprehensive outpatient DBT-A can be successfully adapted, implemented, and evaluated in a clinical setting. Although treatment acceptability and patient satisfaction were not measured, treatment completion (81.1%) and attendance rates (85.1% for group, 81.5% for individual) were high, which suggests that DBT-A was well accepted and well tolerated by patients. Dropout rate for the total sample in our clinic was 18.9%, which is far below the 26% dropout rate reported in the one RCT of DBT-A (Mehlum et al., 2014) and 22% to 62% dropout rates found in open and quasi-experimental trails in outpatient clinics (Courtney & Flament, 2015; Fleischhaker et al., 2011; Hjalmarsson et al., 2008; James et al., 2011; Rathus & Miller, 2002; Tørmoen et al., 2014; Woodberry & Popenoe, 2008). This finding is significant,

given that the second most important goal in the hierarchy of DBT is to keep patients in therapy (Fleischhaker et al., 2011). Further, as in other studies of DBT-A (Hjalmarsson et al., 2008; Tørmoen et al., 2014; Woodberry & Popenoe, 2008), the majority of clinicians in the CAMP DBT program (61.5%) were trainees who learned the DBT model through available trainings and required readings. Didactic sessions were incorporated into consultation team meetings. Although therapy sessions were not coded for adherence, supervision and consultation team often included review of session videotapes. This study shows that relatively inexperienced therapists can successfully learn, provide, and adhere to the treatment.

Hypothesis 2, that treatment adherence and compliance, and behavioral, symptom, and skill use improvements for adolescents would be greater in DBT-A/MF than in DBT-A/P, was not supported. Given that the biosocial model hypothesizes a central role of family environments on the development and maintenance of emotion and behavioral dysregulation, it was hypothesized that direct intervention on the family, as in multifamily group, would provide greater opportunity for intervention on the environment. However, we found that DBT-A/MF did not significantly outperform DBT-A/P on any measure, including treatment attendance and completion, improvements in depression, borderline, or emotion dysregulation symptoms, or DBT skill use, reductions in use of dysfunctional coping, or high-target behaviors. However, when analyzed separately, both DBT-A/MF and DBT-A/P appear to be effective. Adolescents in both groups self-reported reductions in symptoms and use of dysfunctional coping. There was little absolute difference in effect sizes between DBT-A/MF and DBT-A/P on the BDI-II (.07), DERS (.05), BSL-23 (0.2), or WCCL-Dys (0.2) (see Table 5), which suggests that

even a study with a larger sample size may not detect a statistically significant superiority of DBT-A/MF over DBT-A/P.

In the combined sample, improvements in DBT skill use, as measured by the DBT-WCCL were significant but a small effect size was obtained. Once the sample was separated into DBT-A/MF and DBT-A/P, improvements in DBT skills use were no longer significant, which was likely due to inadequate statistical power to detect a small effect. It was somewhat surprising that findings related to DBT skills use were not as strong as other improvements, given the role that DBT skills use appears to play in mediating reductions in suicidal behavior and improvements in emotion regulation in adult samples (Neacsiu et al., 2014; Neacsiu, Rizvi, & Linehan, 2010). It is possible that the null finding related to DBT skills use was related to the use of the DBT-WCCL as the primary measure of skills use. The DBT-WCCL is currently the only available self-report measure of DBT skill use; there are no adaptations for adolescent populations (A. D. Neacsiu, personal communication, March 31, 2016). A large RCT of standard DBT-A is currently underway in the United States and it also is using the DBT-WCCL to assess adolescent DBT skill use; the investigators did not make adaptations to the measure to account for additional adolescent skills (J. R. Asarnow, personal communication, March 31, 2016). The DBT-WCCL was based on the original adult DBT skills manual (Linehan, 1993b), and does not include skills from the adolescent-specific *Walking the Middle Path* skills module (Miller et al., 2007; Rathus & Miller, 2014). An examination of the acceptability of the *Walking the Middle Path* skills found that both adolescents and parents perceived *Middle Path* skills (validation, principles of reinforcement, and dialectical thinking) as among the most helpful of the DBT skills (Rathus, Campbell,

Miller, & Smith, 2015). Thus, it is possible that the DBT-WCCL did not adequately capture all of the skills that adolescents were using. However, it is also possible there are other factors that contribute to improvements in adolescent symptoms and behaviors in DBT-A besides DBT skill use. Based on the biosocial theory, other factors might include family moderators and mediators, including demographics or improved family relationships, which were not assessed in this study.

The design of the current study does not allow us to reach conclusions about equivalence of DBT-A/MF and DBT-A/P. However, this finding demonstrates the need for randomized controlled equivalence trial with a larger sample size (Greene, Morland, Durkalski, & Frueh, 2008) comparing skills training group formats. It may be that adolescent and parent acquisition of skills is more important to adolescent outcomes than the makeup of the group or context in which the skills are learned. The design of the current study also does not allow us to reach conclusions about the impact of inclusion of parents in DBT-A, since parents were involved in both group formats. The extent to which parents or caregivers have been included in treatment has varied widely over published studies, and few studies have examined the impact of DBT-A on parent or family variables (Woodberry & Popenoe, 2008). A larger, randomized trial comparing DBT-A/MF, DBT-A/P, and an adolescent-only condition could examine the impact of parent involvement in treatment, and it would have important implications for implementation of DBT for adolescents in other settings. In our outpatient setting, DBT-A/MF is a better use of resources than DBT-A/P. DBT-A/MF requires fewer clinicians (two co-leaders compared to four co-leaders) and less physical meeting space (one therapy room compared to two rooms) than DBT-A/P. Families in DBT-A/MF in our

clinic pay one fee for service, whereas families in DBT-A/P pay one fee for the adolescent group and a separate fee for the parent group. However, in other settings where parents and caregivers are not available to attend groups with adolescents, such as residential, inpatient, or correctional facilities, it may be necessary to implement parallel or adolescent-only groups.

Hypothesis 3, that improvements in emotion regulation would be associated with decreases in borderline symptomatology and high target behaviors, was partially supported. Results supported the hypothesis that improvements in emotion regulation were significantly related to changes in borderline symptomatology. In particular, improvements in DERS scores appeared to account for all of the variance in BSL change. This is among the first studies to demonstrate that DBT-A is associated with improved emotion regulation (e.g., Courtney & Flament, 2015), and the first to demonstrate that improved self-reported emotion regulation over the course of treatment is associated with improvements in borderline symptomatology. The design of the current study does not allow us to confirm whether DERS mediates the effect of treatment on change in BSL, or examine the effect of improvements in DERS on other treatment targets, including NSSI and suicidal ideation. However, these results support the hypothesis that improving emotion regulation is related to changes in other outcomes in individuals with BPD features, and therefore should be a treatment target (Linehan, 1993a; McMain, Korman, & Dimeff, 2001; Miller et al., 2002).

Limitations

The most notable limitation is the small sample size of this pilot trial, which resulted in inadequate statistical power to detect small-to-moderate effect sizes and to

assess mediators and moderators of treatment response. However, among even marginally significant results, we found moderate-to-large effects indicating that a study with a larger sample size might yield significant results.

The design of this study, as a naturalistic effectiveness study comparing two active treatments, represents both significant strengths and limitations. The methods and measures used in this study are highly generalizable to other outpatient settings. However, generalizability of the results is restricted by the use of an unpublished interview in order to assess primary behavioral outcomes. Further, all participants attended the same treatment facility.

The patients in this study were diagnostically diverse, which is representative of how DBT is routinely implemented in outpatient settings. However, because diagnoses were derived from unstructured clinical interviews, rather than formal diagnostic assessment, reliability ratings of diagnoses are unavailable. In addition, only primary diagnoses were recorded and we were unable to capture comorbid symptomatology. Further, consistent with the nature of an effectiveness study conducted in an outpatient setting, medication use was uncontrolled, and many adolescents had received psychological or psychiatric care before entering the program. We did not systematically collect information regarding concurrent parent training or family therapy or exposure to DBT skills prior to entry in the program. It was, therefore, impossible to statistically control for comorbidities, medications, or exposure to other treatment modalities that may have contributed to therapy outcomes. There were also no systematic follow-up assessments for adolescents who completed DBT-A group, so we were unable to evaluate whether treatment gains were maintained past the six-month study period.

There were several problems with data collection. This study was designed to be as naturalistic as possible, and self-report measures analyzed were collected by group leaders as part of typical clinical practice and were not collected specifically for this study. As a result, some adolescents completed FABMED interviews with an assessor but did not return self-report assessments to group leaders, leading to variability in sample sizes of dependent variables. Further, adolescent mid-point assessments and parent/caregiver data were only sporadically collected, and were therefore unusable for these analyses. Problems with data collection may be avoided in future studies by more thorough documentation and the use of independent assessors who are not involved in the treatment.

It is also important to note that several of the self-report measures were moderately to strongly correlated, suggesting that our measures may have assessed general psychological distress. Further analysis with an increased sample size and clinician-ratings of symptoms and behaviors may increase reliability and clarify the relationship among variables.

Conclusions and Future Directions

Overall, the current findings suggest that comprehensive outpatient DBT-A can be successfully adapted, implemented, and evaluated in a clinical setting. Contrary to hypotheses, multifamily group did not significantly outperform parallel group on attendance or completion rates, self-report outcomes, skills acquisition and use, or interview-assessed behavioral measures. Although all results should be interpreted as preliminary given the small sample size and the study limitations, the data provide some support for the feasibility and impact of both multifamily and parallel skills training

group formats in the outpatient treatment of emotionally dysregulated adolescents. Adolescents in both multifamily and parallel skills training group formats demonstrated significant improvements in self-reported symptoms of depression, borderline personality disorder, and emotion dysregulation. Although NSSI and hospitalization findings were not significant, zero adolescents attempted suicide while in treatment.

Future studies should utilize a randomized design, include more assessment time points, and be sufficiently powered to examine moderators and mediators of treatment. Given the hypothesized role of parental invalidation on the development of symptoms of BPD, future studies should also examine possible differences between DBT-A skills training group formats on outcomes such as family functioning and expressed emotion. Additional measures could include assessment of group environment and qualitative assessment of treatment acceptability and treatment preference. Future studies could also examine the effect of DBT-A on other high target behaviors, including suicidal ideation, substance use, externalizing behavior, impulsive and risky sexual behavior, and dissociation.

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Tables

Table 1

Baseline demographic and diagnostic data, non-suicidal self-injury, suicide attempt, and psychiatric hospitalization history, and self-report scores, intent-to-treat sample

Variable	DBT-A/MF (*n*=17)	DBT-A/P (*n*=20)	Total Sample (*n*=37)
Age: *M* (*SD*)	15.7 (1.2)	15.9 (1.0)	15.8 (1.1)
Sex: *n* female (%)	15 (88.2)	20 (100)	35 (94.6)
Race: *n* (%)			
Caucasian	14 (82.4)	17 (85.0)	31 (83.8)
African-American	3 (17.6)	2 (10.0)	5 (13.5)
Multiracial, number (%)	--	1 (5.0)	1 (2.7)
Primary DSM-IV diagnosis: *n* (%)			
MDD or Dep NOS	9 (52.9)	10 (50.0)	19 (51.4)
GAD or Anx NOS	5 (29.4)	4 (20.0)	9 (24.3)
PTSD	1 (5.9)	--	1 (2.7)
BD or Schizoaffective	--	2 (10.0)	2 (5.4)
ODD	--	3 (15.0)	3 (8.1)
BPD	2 (11.8)	1 (5.0)	3 (8.1)
Self-report measures: *M* (*SD*)			
BDI-II	31.5 (14.2)	26.8 (16.0)	29.5 (15.1)
DERS-Tot	120.5 (27.4)	109.5 (23.4)	115.7 (25.4)
BSL-23	49.6 (26.8)	37.3 (25.7)	43.7 (26.8)
DBT WCCL-Skills	57.8 (23.0)	50.7 (23.5)	53.3 (23.2)
DBT WCCL-Dys	37.9 (9.0)	34.7 (13.0)	36.5 (11.3)
Behavioral outcomes: *M* (*SD*)			
NSSI Frequency	0.5 (0.6)	0.2 (0.3)	0.4 (0.5)
NSSI Severity	0.4 (0.4)	0.2 (0.2)	0.3 (0.4)
# SA lifetime	1.1 (1.6)	0.9 (1.4)	1.0 (1.4)
# Hospitalizations lifetime	1.5 (2.1)	0.8 (1.2)	1.2 (1.7)

MDD = Major Depressive Disorder; Dep NOS = Depressive Disorder, Not Otherwise Specified; GAD = Generalized Anxiety Disorder; Anx NOS = Anxiety Disorder, Not Otherwise Specified; PTSD = Posttraumatic Stress Disorder; BD = Bipolar Disorder; ODD = Oppositional Defiant Disorder; BPD = Borderline Personality Disorder; # SA = number of suicide attempts, # Hospitalizations = number of inpatient psychiatric hospitalizations; NSSI = Nonsuicidal Self-Injury; SA = Suicide Attempt; BDI-II = Beck Depression Inventory – 2nd edition; DERS-Tot = Difficulties in Emotion Regulation Scale (DERS) – Total score; BSL-23 = Borderline Symptom List-23; DBT WCCL-Skills = DBT-Ways of Coping Checklist Skills Subscale; DBT WCCL-Dys = DBT-Ways of Coping Checklist Dysfunctional Coping Subscale.

Table 2

Treatment dropout and attendance[a]

	DBT-A/MF (*n*=17)	DBT-A/P (*n*=20)	Total Sample (*n*=37)
Treatment Dropout			
No. (%)	4 (23.5)	2 (10.0)	6 (16.2)
Weeks before drop, *M* (*SD*)	11.5 (6.0)	14.5 (7.8)	12.5 (6.0)
Treatment Completers – Attendance			
No. of indiv. therapy sessions	19.0 (11.0-22.5)	19.0 (14.8-20.3)	19.0 (14.0-21.0)
Indiv. sessions – % attended	81.5 (72.3-89.2)	78.8 (70.5-87.6)	81.5 (71.4-87.5)
No. of group skills sessions	24.0 (17.0-25.0)	22.5 (19.8-23.3)	23.0 (19.0-24.0)
Group sessions – % attended	85.7 (73.8-90.7)	83.0 (74.4-89.3)	85.1 (75.0-88.9)

[a]Unless otherwise indicated, data are given as median (interquartile range).

Table 3

Descriptive statistics for behavioral outcome variables for treatment completers

Outcome	Group	*n*	Pre-treatment		Post-treatment	
			M	*SD*	*M*	*SD*
BDI	DBT-A/MF	11	33.3	15.8	19.9	14.2
	DBT-A/P	12	27.5	19.9	14.0	14.7
	Total Sample	23	30.3	16.8	16.8	14.4
BSL-23	DBT-A/MF	11	57.3	28.7	29.2	19.9
	DBT-A/P	12	40.9	29.8	21.8	21.9
	Total Sample	23	48.7	29.8	25.3	20.0
DERS-Total	DBT-A/MF	11	125.6	31.2	84.8	31.5
	DBT-A/P	11	111.6	20.5	92.6	28.7
	Total Sample	22	118.6	26.7	88.7	29.7
DBT WCCL-Skills	DBT-A/MF	11	1.4	0.6	1.7	0.7
	DBT-A/P	11	1.3	0.5	1.6	0.6
	Total Sample	22	1.3	0.6	1.6	0.7
DBT WCCL-Dys	DBT-A/MF	11	1.9	0.3	1.5	0.6
	DBT-A/P	12	1.6	0.6	1.1	0.6
	Total Sample	23	1.8	0.5	1.3	0.6
NSSI Frequency	DBT-A/MF	11	0.7	0.7	0.3	0.3
	DBT-A/P	17	0.2	0.3	0.2	0.5
	Total Sample	28	0.4	0.6	0.3	0.4
NSSI Severity	DBT-A/MF	11	0.5	0.5	0.4	0.6
	DBT-A/P	17	0.2	0.2	0.2	0.3
	Total Sample	28	0.3	0.4	0.3	0.5
# SA in last 6 months	DBT-A/MF	11	0.6	0.8	0.0	0.0
	DBT-A/P	17	0.4	0.6	0.0	0.0
	Total Sample	28	0.5	0.7	0.0	0.0
# hosp in last 6 months	DBT-A/MF	11	0.7	1.0	0.2	0.6
	DBT-A/P	17	0.5	0.6	0.4	1.1
	Total Sample	28	0.6	0.8	0.3	0.9

BDI = Beck Depression Inventory; DERS-Tot = Difficulties in Emotion Regulation Scale (DERS) – Total score; BSL-23 = Borderline Symptom List-23; DBT WCCL-Skills = DBT-Ways of Coping Checklist Skills Subscale; DBT WCCL-Skills = DBT-Ways of Coping Checklist Dysfunctional Coping Subscale; NSSI Freq.= Nonsuicidal Self-Injury Frequency, NSSI Sev. = Nonsuicidal Self-Injury Severity, # SA = number of suicide attempts, # hosp = number of inpatient psychiatric hospitalizations

Table 4

Within-subjects ANOVA results for self-report and behavioral outcome variables for treatment completers, total sample

	RM ANOVA			
Outcome	*df*	*F*	η_p^2	*p*
BDI-II	1	18.68	.46	< .01
BSL-23	1	18.12	.45	< .01
DERS-Tot	1	18.12	.46	< .01
DBT WCCL-Skills	1	4.82	.19	.04
DBT WCCL-Dys	1	22.34	.50	< .01
NSSI Freq.	1	1.72	.06	.20
NSSI Sev.	1	0.28	.01	.60
# SA in last 6 months	1	14.54	.35	< .01
# hosp in last 6 months	1	1.95	.07	.17

BDI-II = Beck Depression Inventory – 2nd edition; DERS-Tot = Difficulties in Emotion Regulation Scale (DERS) – Total score; BSL-23 = Borderline Symptom List-23; DBT WCCL-Skills = DBT-Ways of Coping Checklist Skills Subscale; DBT WCCL-Dys = DBT-Ways of Coping Checklist Dysfunctional Coping Subscale; NSSI Freq.= Nonsuicidal Self-Injury Frequency, NSSI Sev. = Nonsuicidal Self-Injury Severity, # SA = number of suicide attempts, # hosp = number of inpatient psychiatric hospitalizations.

Table 5

Within-subjects ANOVA results for self-report outcome variables for treatment completers, by condition

Outcome	Group	Within-groups RM ANOVA *df*	*F*	η_p^2	*p*
BDI-II	DBT-A/MF	1	9.95	.50	.01
	DBT-A/P	1	8.21	.43	.02
DERS-Tot	DBT-A/MF	1	12.70	.56	< .01
	DBT-A/P	1	6.87	.41	.03
BSL-23	DBT-A/MF	1	12.66	.56	< .01
	DBT-A/P	1	6.04	.36	.03
DBT WCCL-Skills	DBT-A/MF	1	1.42	.12	.26
	DBT-A/P	1	4.62	.32	.06
DBT WCCL-Dys	DBT-A/MF	1	7.39	.43	.02
	DBT-A/P	1	15.33	.58	< .01

BDI-II = Beck Depression Inventory – 2nd edition; DERS-Tot = Difficulties in Emotion Regulation Scale (DERS) – Total score; BSL-23 = Borderline Symptom List-23; DBT WCCL-Skills = DBT-Ways of Coping Checklist Skills Subscale; DBT WCCL-Dys = DBT-Ways of Coping Checklist Dysfunctional Coping Subscale.