

5-2016

# Effectiveness of Utilizing Components of Dialectical Behavior Therapy in Eating Disorder Treatment

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## Recommended Citation

Block, Caitlin. (2016). Effectiveness of Utilizing Components of Dialectical Behavior Therapy in Eating Disorder Treatment. Retrieved from Sophia, the St. Catherine University repository website: [https://sophia.stkate.edu/msw\\_papers/560](https://sophia.stkate.edu/msw_papers/560)

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Effectiveness of Utilizing Components of Dialectical Behavior Therapy in Eating  
Disorder Treatment

By

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MSW Clinical Research Paper

Presented to the Faculty of the  
School of Social Work  
St. Catherine University and the University of St. Thomas  
St. Paul, Minnesota  
in Partial fulfillment of the Requirements for the Degree of  
Master of Social Work

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The Clinical Research Project is a graduation requirement for MSW students at St. Catherine University/University of St. Thomas School of Social Work in St. Paul, Minnesota and is conducted within a nine-month time frame to demonstrate facility with basic social research methods. Students must independently conceptualize a research problem, formulate a research design that is approved by a research committee and the university Institutional Review Board, implement the project, and publicly present the findings of the study. This project is neither a Master's thesis nor a dissertation

### **Abstract**

Eating Disorders affect millions of individuals each year and are often misunderstood. Current interventions are only successful about 50% of the time. Previous research suggests that Dialectical Behavior Therapy may be a promising intervention in treating this population, due to the high comorbidity of eating disorders and borderline personality disorder, as well as the similar symptomology. The purpose of this systematic literature review is to examine the question: How effective are DBT components in any combination in the treatment of eating disorders? This review includes only peer-reviewed articles published after 2010. The database PsychInfo was searched to gather research and the search terms included were; dialectical behavior therapy, DBT, mindfulness, emotion regulation, interpersonal effectiveness, distress tolerance, radically open dialectical behavior therapy, effectiveness, anorexia nervosa, bulimia nervosa, binge-eating disorder, avoidant/restrictive food intake disorder, eating disorder not otherwise specified and eating disorders. After assessing each article for inclusion and exclusion criteria, nine articles were included in this review. Overall, Dialectical Behavior Therapy yielded positive outcomes in the treatment of anorexia nervosa, bulimia nervosa, binge-eating disorder, and eating disorder not otherwise specified. The research examined in this review also poses that Dialectical Behavior Therapy is beneficial even when not offered in its comprehensive format. These studies found positive results when offering a comprehensive DBT program, individual therapy alone, skills group alone, a self-help guide paired with phone coaching, as well as interventions that focused on the mindfulness module only. Future research is needed to determine which components of DBT are most helpful in treating which eating disorder diagnoses, as well as to determine the most beneficial length of treatment.

### **Acknowledgments**

First, I would like to take the time to thank everyone who supported me throughout the past two years. I have received support from countless family members, friends and co-workers, which made this journey manageable. Thank you for all of the words of encouragement, supportive phone calls, and your understanding around my absence in the last two years of our lives.

I especially want to thank the people on my committee for this research project. I want to send a huge thank you to Jessica Toft for being my fearless leader in the process. I could not have asked for a more supportive, positive, and knowledgeable research chair. Everyone in your section of research is lucky to have you! I would also like to thank Rebecca Neeck, an LICSW and a previous supervisor of mine, who was kind enough to sit on my committee. I appreciate your time, suggestions and feedback. My other committee member was Jake Garin, also an LICSW who is a friend and colleague from my undergraduate social work program. Thank you Jake for being willing to give up your time and energy to support my project. I was honored to have two people who have so much knowledge and experience with DBT and/or the treatment of individuals with eating disorders to overlook my research.

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## Introduction

Eating disorders are a significant mental health concern affecting millions of Americans each year. Traditional interventions are often ineffective for many individuals with eating disorder diagnoses. However, one therapy may hold particular promise. Dialectical Behavior Therapy (DBT) was developed by Linehan, to specifically treat individuals with Borderline Personality Disorder (BPD) and was found to be quite effective (Chen, Matthews, Allen, Kuo, and Linehan, 2008; Fischer & Peterson, 2014). Disruptive behaviors common in individuals with BPD like self-injurious behaviors, suicidal ideation, and a lack of emotion regulation skills, can be compared to disruptive behaviors seen in individuals with eating disorders like bingeing, purging and restricting. Research to date has suggested that DBT has been successful in minimizing the number of eating disorder behaviors in clients receiving treatment (Erb, Farmer & Mehlenbeck, 2013; Fischer & Peterson, 2014; Kroger et al., 2010).

The DSM-V lists anorexia nervosa (AN), bulimia nervosa (BN), binge eating disorder (BED), other specified feeding or eating disorder (OSFED), (previously termed eating disorder not otherwise specified (EDNOS)), and Avoidant/Restrictive Food Intake Disorder (ARFID) as the primary eating disorder diagnoses. Moreover, this most recent edition of the DSM changed diagnostic criteria for AN and BN diagnoses, and for the first time recognized BED as an eating disorder. Below is a summary of these changes written by the American Psychiatric Association (2013):

Anorexia nervosa, which primarily affects adolescent girls and young women, is characterized by distorted body image and excessive dieting that leads to severe weight loss with a pathological fear of becoming fat...Bulimia nervosa is characterized by frequent episodes of binge eating followed by inappropriate behaviors such as self-induced vomiting to avoid weight gain...Binge eating disorder is defined as recurring episodes of eating significantly more food in a short period of time than most people would eat under similar circumstances, with episodes marked by feelings of lack of control. Someone with binge eating disorder may eat too quickly, even when he or she is

not hungry. The person may have feelings of guilt, embarrassment, or disgust and may binge eat alone to hide the behavior. This disorder is associated with marked distress and occurs, on average, at least once a week over three months (para. 6).

OSFED (previously EDNOS) is specified for clients who meet criteria for an eating disorder, but do not fit under any of the above-specified diagnoses.

Avoidant Restrictive Food Intake Disorder (ARFID) was added in the DSM-V. ARFID is a disorder that inhibits consumption of certain foods. It has a different psychopathology than other eating disorders. For example, fear of gaining weight is not typically seen in cases of ARFID. It is most often seen in children and is often outgrown. No studies were found that examined the use of DBT in treating patients with a diagnosis of ARFID, most likely because it is typically seen in kids and is also new to the DSM-V.

Eating Disorders in the United States are significantly underestimated in both magnitude and severity. The National Eating Disorder Association (n.d.) estimates that 20 million women and 10 million men struggle with eating disorders in the United States. Eating disorders and their health consequences are largely misunderstood as a lifestyle choice versus a serious illness. The National Eating Disorder Association writes, “anorexia has the highest mortality rate of any mental illness” (“What is DBT?”, n.d., What we do section, para. 1).

In 2007, it was estimated that 0.9% of women and 0.3% of men met diagnostic criteria for anorexia nervosa during their lifetime. One and a half percent of women, and 0.5% of men will meet the diagnostic criteria for bulimia nervosa in their lifetimes. Lastly, 3.5% of women and 2.0% of men will meet criteria for binge-eating disorder throughout their lifespan (Hudson, Hiripi, Pope & Kessler, 2007).

According to one study, in 2004, 34% of patients diagnosed with BPD also met criteria for an eating disorder diagnosis (Zanarini, Frankenburg, Hennen, Reich, & Silk, 2004). Behavior

associated with BPD and eating disordered behaviors are impulsive coping mechanisms for emotion dysregulation (Linehan & Chen, 2005). Linehan and Chen (2005) provide the following description of DBT:

DBT is informed by Eastern mindfulness practices and behavior therapy, and is conducted within the frame of a dialectical epistemology. The underlying dialectic involves acceptance of clients in their current distress, yet aiding clients with skills to alter their dysfunctional behavioral patterns. (p.168)

The comprehensive structure of a DBT program involves individual therapy, skills group, group consultation for DBT therapists, as well as 24-hour phone consultation (with the individual therapist) available to the client. DBT contains four modules: mindfulness, interpersonal effectiveness, emotion regulation and distress tolerance (Linehan & Chen, 2005). These modules are taught in the skills group and provide structure and simplicity for the participants.

### **DBT and Its Modules**

This paper will not only consider studies that utilized DBT in its comprehensive form, but will also consider studies that used different module methodologies from DBT. To this end, a brief overview and definition of each DBT module will be presented, including mindfulness, emotion regulation, distress tolerance and interpersonal effectiveness.

Mindfulness is the principle of being “fully aware and present in this one moment (non-judgementally)” (“What is DBT?”, n.d., What skills are taught in DBT section para. 1). It attempts to train individuals to focus and control their own mind, instead of feeling that their mind has control over them. Mindfulness strategies include paced breathing, purposeful observation and description, and self-soothing.

The emotion regulation module focuses on teaching participants “how to change emotions that [they] want to change” (“What is DBT?”, n.d., What skills are taught in DBT section para. 1). It incorporates many skills that help individuals to identify and label their



emotions, understand the functions of their emotions, and teach them how to tolerate uncomfortable emotions. It aims to develop wellness strategies that can help to reduce an individual's emotional vulnerability by using preventative strategies like getting enough sleep, taking medications as prescribed, and eating a healthy diet.

DBT also incorporates a module of distress tolerance. These skills are employed when an individual is extremely dysregulated (emotionally and physically), and is unable to step back and use coping skills. These skills are simple and straightforward and were created to help individuals get through extreme distress. "What is DBT?" defines the intent of the distress tolerance module as teaching clients "how to tolerate pain in difficult situations, not change it" ("What is DBT?", n.d., What skills are taught in DBT section, para.1).

Finally, the module of interpersonal effectiveness includes skills that emphasize "how to ask for what you want and say no while maintaining self-respect and relationships with others" ("What is DBT?", n.d., What skills are taught in DBT section para. 1). These skills are particularly challenging for clients with BPD. Considering the high comorbidity between BPD and eating disorders, it seems probable that DBT may be beneficial in treating individuals with eating disorder diagnoses.

An adapted form of DBT that will also be considered in this study is called Radically Open DBT (RO-DBT). RO-DBT was adapted to specifically target over-controlled behaviors like restriction in patients with AN. Traditional DBT primarily targets impulsive behaviors caused by emotion dysregulation like bingeing, purging and suicidal ideation. There is more research that supports DBT's effectiveness in treating BN, BED and EDNOS. RO-DBT was developed to use with patients with AN. Lynch, Gray, Hempel, Titley, Chen and O'Mahen (2013) write:

While resting on many of the core principles of standard DBT, the therapeutic strategies in RO-DBT are often substantially different, both theoretically and practically. For example, RO-DBT contends that emotional loneliness represents the core problem for OC [overcontrol], not emotion dysregulation. (2013, p. 4)

Lynch et al. goes on to explain, “In addition, RO-DBT conceptualizes restrictive and ritualized eating as a form of maladaptive inhibitory control...” (2013, p. 5).

### **Ineffectiveness of Interventions addressing Eating Disorders**

Research shows that current treatments like CBT, Nutritional Counseling, Family Based Therapy or Psychotherapy are not consistently or particularly effective for eating disorders. With current treatments, success rates for clients with BN and BED are about 50%. The success rates for individuals with AN, are even lower (Linehan & Chen, 2005). Not only are success rates low for current counseling interventions with individuals with eating disorders, but research also shows that medication for treating depressive symptoms in clients with eating disorders is only marginally effective (Lenz, Taylor, Fleming, & Serman, 2014). Therefore, it is imperative to research alternative therapies that may have higher success rates for treating clients with eating disorders.

According to many different sources of research, individuals diagnosed with an eating disorder are less capable of regulating negative affect or emotional distress (Ben-Porath, Federici, Wisniewski, & Warren, 2014). Additionally, researchers have speculated that the 50% of clients with eating disorders who do not respond to current treatments, have a greater chance of comorbidity with what was previously labeled an Axis I or II diagnoses, like BPD or Obsessive Compulsive Disorder. These individuals also have more difficulty with emotion regulation, impulsivity and interpersonal relationships (Federici, Wisniewski, & Ben-Porath,

2012). While coping behaviors for individuals with BPD versus individuals with EDs look different, this researcher would posit that these behaviors are serving the same purpose, which is to help with emotion regulation. Whether it be self-injury, suicidal ideation, bingeing, purging, restricting, etc., DBT skills were created to target and minimize these types of behaviors. Due to the high co-morbidity rate of eating disorders with BPD and other personality disorder diagnoses, and the similarities in their behaviors, it is reasonable to say that DBT is a promising alternative to treat eating disorders

### **Effectiveness of DBT for Treating ED**

Furthermore, prior research studies have been conducted that have examined the utilization of DBT amongst clients with AN, BN, BED, and EDNOS or OSFED. In one study, it was found that there was a reduction in eating disordered behaviors including bingeing, purging, restricting and eating disordered cognitions (Ben-Porath, Federici, Wisniewski, & Warren, 2014). Another study found that samples showed large effect sizes indicating that DBT may be advantageous to decreasing the number of eating disorder episodes (including severe restriction, dieting, over-exercising, self-induced vomiting, and/or misuse of laxatives to avoid weight gain) in clients with eating disorder diagnoses (Lenz, Taylor, Fleming, & Serman, 2014). These studies conclude that DBT can be beneficial to individuals with all eating disorder diagnoses besides ARFID, which was new to the DSM-V.

### **Using DBT with Anorexia versus Other Eating Disorder Diagnoses**

Some studies identify DBT to be more advantageous to clients with BN, BED, EDNOS or OSFED diagnoses compared to clients with AN. Some studies consider only individuals with BN, BED, or EDNOS or OSFED diagnoses. Fischer and Peterson (2014) found not only an immediate decrease in bingeing, purging and cognitive symptoms of BD/EDNOS after treatment,

but also found that these behaviors remained lower at a 6-month follow-up assessment. This study also found that three out of seven subjects no longer met eating disorder diagnostic criteria at the 6-month follow-up assessment. A second study focused on women with only BN and BPD and found that DBT was effective in decreasing the frequency of binge eating episodes (Chen, Matthews, Allen, Kuo, & Linehan, 2008). Lastly, a third study included only women with BED and used a 12-week model for DBT skills group intervention. Of the original five participants, three participants finished the program and no longer met the criteria for a BED diagnosis. The women also reported that the DBT treatment was very helpful to them. Additionally, there was a 1-year follow-up completed and participants were still exhibiting symptom decreases (Erb, Farmer, & Mehlenbeck, 2013).

The differences in effectiveness of DBT with BN, BED, EDNOS or OSFED and AN may be due to the differences in symptomology between the disorders. BN, BED, EDNOS and OSFED often exhibit behaviors of undercontrol like binge eating or purging (Lynch et al., 2013). These behaviors can easily be compared to undercontrol BPD behaviors like self-injurious behavior, which may be why traditional DBT may be more effective in treating these disorders. On the other hand, AN individuals often exhibit behaviors of overcontrol like restriction (Lynch et al., 2013). Lynch et al. (2013) goes on to explain:

Overcontrol (OC) or excessive inhibitory control has been linked to social isolation, poor interpersonal functioning, hyper-perfectionism, rigidity, risk aversion, lack of emotional expression, and the development of severe and difficult-to-treat mental health problems, such as chronic depression, anorexia nervosa, and obsessive compulsive personality disorder. Relatedly, research robustly links eating disorders to three “personality subtypes”: overcontrolled, undercontrolled and low psychopathology. AN-R (restrictive

type) is most representative of the overcontrolling type... [DBT] was originally designed for individuals with [BPD] and has been shown to be effective in treating two randomized controlled trials targeting binge-purge [EDs] with undercontrolled problems such as severe emotion dysregulation...Radically open-DBT was developed and conceptualized as a transdiagnostic treatment for disorders of overcontrol such as AN-R. (AN-R and overcontrol: a transdiagnostic prespective section, para. 1 and Radically open-dialectical behavior therapy section, para.1)

This review will further analyze Lynch et al.'s study and present results in the finding section of this review.

### **Timeframe of Treatment**

Research also discussed different lengths of treatment offered and the benefits observed and reported by individuals exposed to differing lengths of DBT treatments. One study argued that no matter the dose of DBT, whether that be once a week skills group paired with individual therapy, or the comprehensive DBT model, clients were treated for an average of 20 days, and reduction of eating disordered behaviors was observed across the study (Ben-Porath, Federici, Wisniewski, & Warren, 2014). This suggests that DBT offered via different modalities can be effective in treating eating disorders.

A second study offering longer intervention highlighted that for their sample of clients with BN or BED with BPD, 6-months of DBT reduced non-suicidal self-injury, suicidal behavior, as well as binge eating. The article highlighted that clients also showed improvement in social functioning (Chen, Matthews, Allen, Kuo, & Linehan, 2008).

On the contrary, a third study reported that clients told therapists and assessors that their DBT treatment was too short. In this study, clients were offered 6-months of DBT treatment due

to funding shortages. This article suggested that more detailed research be completed to determine what timeframe of DBT is most beneficial for treating clients with eating disorders (Chen, Matthews, Allen, Kuo, & Linehan, 2008). Nice juxtaposition!

### **Effectiveness of Individual DBT Modules/Components**

Some studies only utilized individual modules or partial components of DBT to treat different eating disorder diagnoses. The first study evaluated the use of mindfulness interventions for treating BED. The results showed “large or medium-large effects of these interventions on binge eating” (Godfrey, Gallo, & Niloofar, 2015, p. 348). A second study provided emotion regulation training as an intervention for BED. This study found that this emotion regulation focused intervention reduced binge eating, stress, and depression (Clyne & Blampied, 2004).

On the other hand, some studies used interventions that draw from several different DBT modules, but only focus on one modality, for instance only skills group or individual therapy. One study examined women with BN or BED and compared two groups that received different modalities of DBT treatment. One group used only self-assessment and asked participants to complete the DBT Diary Card, which included adaptations to encompass eating disordered behaviors. The second group participated in a DBT skills group. Both groups received 16 weeks of treatment and both groups showed significant reductions in eating disordered behaviors (Klein, Skinner, & Hawley, 2013).

Although traditional interventions successfully treat many individuals with eating disorders, research shows that there are many individuals who do not improve with traditional treatment interventions. Many social workers move into clinical practice, so it is important to research and acknowledge which treatment approaches are effective for treating individuals with

eating disorders. This systematic literature review can also be useful to generalist social workers working with this population, in order to establish the best treatment or service plan for the client. This review will attempt to identify and analyze all current research on utilizing comprehensive DBT or singular modules from DBT to treat clients with eating disorders and answer the question: How effective are DBT components in any combination in the treatment of eating disorders?

### **Methods**

DBT is a relatively new and complex therapy approach and has many pieces and modules that can be used together or separately. For the purpose of collecting as much data as possible, research that used any or all parts of DBT were analyzed. The components of DBT considered included mindfulness, emotion regulation, distress tolerance, interpersonal effectiveness and radically open dialectical behavior therapy. Programs offered DBT through different modalities including individual therapy, skills group, phone consultation, therapist consultation groups, self-help guides or a combination of these modalities.

### **Search Strategy**

Originally, the PsychInfo, Social Work Abstracts and SocIndex databases were searched; however, PsychInfo yielded enough data for the purposes of this study. Many of the sources found on Social Work Abstracts and SocIndex were duplicates of sources found using PsychInfo. Therefore, PsychInfo was the only database utilized in this review.

During the search, specific terminology was used including: dialectical behavior therapy, mindfulness, emotion regulation, interpersonal effectiveness, distress tolerance, radically open dialectical behavior therapy, effectiveness, anorexia nervosa, bulimia nervosa, binge eating disorder, avoidant/restrictive food intake disorder, eating disorder not otherwise specified and

eating disorders. The term “eating disorder not otherwise specified” was chosen as a search term instead of other specified feeding or eating disorder (OSFED), because OSFED is a term new to the DSM-V and the majority of research from 2010-2015 will utilize DSM-IV language.

The search terms were broken into two categories and searched separately. Using PsychInfo, the researcher first searched anorexia nervosa, bulimia nervosa, binge eating disorder, eating disorder not otherwise specified, avoidant/restrictive food intake disorder and eating disorders. An advanced search was used and each term was searched as an “index term” and the option “or” was used between each term. A second advanced search was run using the terms dialectical behavior therapy, DBT, mindfulness, interpersonal effectiveness, distress tolerance, emotion regulation, radically open DBT and effectiveness. Again, the options “index term” and “or” were used as specifiers. After both searches were completed, the researcher went to “recent searches” in PsychInfo and ran a combined search, selecting both of these original searches and using “and” as a conjunction.

### **Study Types and Level of Publication**

To capture the most comprehensive pool of existing research on using DBT to treat clients with eating disorders, the types of studies considered included; meta-analysis and systematic reviews, randomized controlled trials with definitive results, randomized controlled trials with non-definitive results, cohort studies, case-control studies, cross-sectional surveys, and case reports. After completing the search and elimination phases of this review, the types of studies represented in this review include; systematic reviews, case studies and randomized controlled trials with definitive and non-definitive results.



Only articles published in peer-reviewed journals were included in this study in order to boost confidence in the findings. This study did not consider dissertations, professional reports that were not peer-reviewed, or materials found in the grey literature.

### **Review Protocol**

**Inclusion and exclusion criteria.** In order to be included in this review, studies needed to utilize participants who were 14 years of age and older. The majority of participants met diagnostic criteria for AN, BN, BED, or EDNOS; however, studies that included both full and subthreshold participants were accepted. Only studies from 2010 and later were analyzed.

Studies were excluded if they were not published in English, if more than one established treatment approach was utilized, or if studies were considering participants with eating disordered behaviors, but no diagnosis. Even with the specifiers of this search, some results were not peer-reviewed articles and were therefore eliminated. The search also yielded some studies that were not relevant to the subject matter and were excluded upon further review.

**Phases of elimination.** After the initial search was performed, the researcher went through three phases of elimination. One article was eliminated, because the researcher was unable to gain access to the full text. The first elimination phase included reviewing only article titles and eliminating studies based on the exclusion criteria. The researcher then reviewed the article abstracts making similar eliminations. The remaining articles were read in full. The original search yielded 135 results. After all phases of elimination, nine studies remained that met all inclusion criteria and were analyzed for this systematic literature review. See Table 1 for a list of all articles included in this study.

Table 1: Analyzed Articles

Title	Author(s)	Journal/Year
A randomized wait-list controlled pilot study of dialectical behavior therapy guided self-help for binge eating disorder	Masson, P., Von Rasnon, K., Wallace, L. & Safer, D.	<i>Behaviour Research and Therapy</i> , 2013
Adapting Dialectical Behavior Therapy for Outpatient Adult Anorexia Nervosa—A pilot Study	Chen E., Segal, K., Weissman, J., Zeffiro, T., Gallop, R., Linehan, M., Bohus, M., & Lynch, T.	<i>International Journal of Eating Disorders</i> , 2015
Appetite-Focused Dialectical Behavior Therapy for the Treatment of Binge Eating with Purging: A Preliminary Trial	Hill, D., Craighead, L., & Safer, D.	<i>International Journal of Eating Disorders</i> , 2011
A Condensed Dialectical Behavior Therapy Skills Group for Binge Eating Disorder	Erb, S., Farmer, A., & Mehlenbeck, R.	<i>Journal of Cognitive Psychotherapy</i> , 2013
Dialectical Behavior Therapy for Adolescent Binge Eating, Purging, Suicidal Behavior, and Non-Suicidal Self-Injury: A Pilot Study	Fischer, S., & Peterson, C.	<i>Psychotherapy</i> , 2015
Outcome of Dialectical Behaviour Therapy for Concurrent Eating and Substance Use Disorders	Courbasson, C., Nishikawa, Y., & Dixon, L.	<i>Clinical Psychology and Psychotherapy</i> , 2012
Radically open-dialectical behavior therapy for adult anorexia nervosa: feasibility and outcomes from an inpatient program	Lynch T., Gray K., Hempel, R., Titley, M., Chen, E. & O'Mahen	<i>BMC Psychiatry</i> , 2013
The Application of Mindfulness to Eating Disorders Treatment: A Systematic Literature Review	Wanden-Berghe, R., Sanz-Valero, J., & Wanden-Berghe, C.	<i>Eating Disorders</i> , 2010
Using Mindful Eating to Treat Food Restriction: A Case Study	Albers, S.	<i>Eating Disorders</i> , 2010

## **Findings**

The goal of this systematic literature review was to examine and answer the question: How effective is the use of DBT components in eating disorder treatment? A carefully considered search was completed within PsychInfo using the approach outlined in the Methods section. Of 135 results, nine peer-reviewed articles met all of the inclusion and exclusion criteria detailed.

### **Demographics of Studies' Participants**

Interestingly, of the nine identified articles, there were a fairly equal number of studies devoted to the different categories of eating disorders. Two (22%) studied individuals with BED, two (22%) studied individuals with BN, three (33%) studied individuals with AN or EDNOS and two (22%) studied individuals with AN, BN, BED or EDNOS. Demographics across studies were relatively similar and limited. Eight studies (89%) used only adult participants and one study (11%) examined adolescents age 14 and older. As far as gender, six (69%) articles only examined females. Three (33%) included both male and female participants; however, of those three the highest male representation was 10% of the sample. Lastly, all studies reported that the majority of their subjects were Caucasian.

### **Studies' Modalities and Length of Treatment**

The articles considered in this review offered treatment in different formats. Standard DBT uses a template of individual therapy, skills group, phone-coaching and therapist consult simultaneously throughout treatment. While some studies followed this format, others had success using specific modalities instead of the whole package. Three (33%) of the articles offered a comprehensive version of DBT therapy including individual therapy, skills group, phone consultation and therapist consult group. Individual therapy was utilized as the primary

treatment modality in two (22%) studies. Skills group alone was used in two (22%) of the articles. One study (11%) reported using a self-help manual after providing participants with a 45-minute orientation to DBT and the manual. This study also provided six bi-weekly 20-minute support phone-coaching calls. Lastly, the final study was a systematic literature review that examined eight different studies. That literature review focused on mindfulness-based interventions, so a variety of treatment modalities including; mindfulness, Acceptance and Commitment Therapy (ACT), DBT, and Mindfulness-based Cognitive Therapy were utilized in the studies reviewed..

Seven (78%) of the studies considered in this review were conducted in an outpatient setting. One (11%) utilized DBT in an inpatient setting and the final study was a systematic literature review that included studies using a variety of settings.

Treatment length ranged from eight weeks to one year. The two longest studies (six months and one year) both offered comprehensive DBT programs. Studies that used skills group only, individual therapy only, or a self-help guide were shorter, typically several weeks. The mean length of treatment was 19.7 weeks. This was calculated using 7 out of the 9 studies, because one study was the systematic literature review, which considered several different studies and a second study reported that length of treatment was decided on an individual basis.

### **Studies' Measurements of Improvement**

While each study utilized DBT and its components uniquely, some studies used the same or similar tools to measure progress. The majority of the studies utilized multiple assessment tools, as well as participant self-reports. The most common assessment tools used were the Eating Disorder Examination (EDE), the Beck Depression Inventory, and the Structured Clinical Interview for DSM-IV (SCID I & II). Body Mass Index (BMI) was also used to measure

participants' progress in the majority of the studies analyzed in this review. The most common improvements seen across studies was a decrease in eating disordered behaviors including bingeing, purging, restricting, over exercising, etc. Clients with AN also typically exhibited an increased BMI at post-treatment.

### **Themes regarding Effectiveness of DBT Components on Eating Disorders**

**Improvements in patients with AN/EDNOS.** Three out of the nine articles only examined subjects with AN or EDNOS. These studies analyzed 63 participants in total including only two males (3%). In total, 15 individuals dropped out before treatment was completed. This equals a dropout rate of 24%. Although sample sizes were small in these studies, the overall positive effects offer promising outcomes for the use of DBT components in the treatment of AN/EDNOS.

Albers (2010) provided 15 individual therapy sessions and focused on integrating mindful eating skills into each session. Chen et al. (2015) offered a comprehensive DBT model including skills group, individual therapy, phone coaching and therapist consult. Length of treatment was decided on a case-by-case basis. Lastly, Lynch et al. (2013) used Radically Open DBT (RO-DBT) on an inpatient unit. RO-DBT was utilized using an eight weeks skills group model.

All three studies reported increases in BMI from pre-treatment to post treatment. One study was a single case study that taught mindful eating skills using individual therapy and the subject's BMI increased by 2.5% (Albers, 2011). Chen at al. (2015) reported a "modest effect size in BMI" (p. 129) with their comprehensive DBT approach. Lastly, the third study, which included skills group in an inpatient setting, reports that, "For treatment completers, there was a large and significant difference from admission to discharge corresponding to a large effect size

on patient BMI” (Lynch, Gray, Hempel, Titely, & Chen, 2013, BMI section, para. 1). According to the authors, the mean admission BMI for treatment completers was 14.69% and the mean discharge BMI was 18.26%. (Lynch, Gray, Hempel, Titely, & Chen, 2013, Table 5). For those participants who remained in these studies, the comprehensive DBT program, RO-DBT, and mindfulness focused individual therapy seemed to have a quite modest to a relatively significant impact on increasing BMI.

Besides BMI increases, these studies also highlighted a decrease in eating disordered behaviors like restriction and a decrease in diagnostic criteria fulfillment. Lynch et al. (2013) reported that 35% of treatment completers were in full remission at discharge and 55% were in partial remission. Albers (2011) also reported an “overall decline in restriction” (p. 97). These results reinforce that DBT is a potentially effective treatment for AN/EDNOS.

**Improvements in patients with BED.** Two articles focused on treating individuals with BED and both articles reported positive results. The first study conducted by Erb, Farmer and Mehlenbeck (2013) provided 12 weeks of DBT skills group (a single modality of DBT) to three female participants. They reported:

The DBT skills group treatment described in this case study resulted in clinically significant reduction of binge eating symptoms for three women with BED. By the end of treatment, two had no objective binges, and one reported objective binges reduced to once per week. Importantly, these gains were maintained and even further improved upon the 1-year follow-up, when all three women reported no objective bingeing in the month before the assessment. (p. 352)

The Masson, von Ranson, Wallace and Safer (2013) study worked with 60 men and women with BED utilizing a self-help manual and bi-weekly phone-coaching calls. They reported:

...reduced binge eating and improved quality of life and emotional regulation at the end of treatment compared to wait-list controls. At six months post-treatment, individuals who had received the treatment continued to report improved outcome on most variables compared to baseline scores. (p. 727)

Neither study discussed above offered comprehensive DBT, yet both yielded positive results and symptom minimization. These studies highlight that single modalities of DBT treatment (in this case skills group), as well as a combination (self help guide with phone coaching) were found effective in the treatment of BN.

**Improvements in patients with BN.** Two of the articles analyzed in this review focused solely on individuals with BN. Fischer and Peterson's (2015) study worked with adolescents and provided a six month comprehensive outpatient DBT program. Hill, Craighead and Safer (2011) studied adults and used only individual therapy provided weekly for 12 weeks. The dropout rate in Fisher and Peterson study was 30% (3/10), which the article noted, is "comparable with other studies examining treatment of adolescents with BN or treatment of EDs with DBT" (p. 87). The Hill, Craighead and Safer (2011) study had a dropout rate of 15.4% (16/26).

Both studies yielded positive results. Hill, Craighead and Safer (2011) found that after treatment, 26.9% (7/26) participants had zero binge eating or purging episodes and 15.4% (4/26) were abstinent in either binge eating or purging. Overall, 61.5% of participants no longer met DSM-IV criteria for BN post-treatment (Hill, Craighead, & Safer, 2011). In the adolescent study, "All participants experienced significant decreases in binge eating, purging, and cognitive symptoms of BN/EDNOS across the course of the study... Additionally, three out of seven completers no longer met criteria for an ED at the 6-month follow-up assessment" (Fischer & Peterson, 2015, p.87).

Besides significant improvements in the minimization of targeted eating disordered behaviors, both studies found other themes. Fischer and Peterson (2015) reported that several participants lost weight during the course of the study. This is notable, because many individuals with BN maintain a normal or above average body weight (National Eating Disorder Association, n.d.). This study highlights that participants were able to minimize maladaptive behaviors and lose weight in healthier ways. Fischer and Peterson noted that this is in contrast to most studies treating adults with BN. Hill, Craighead and Safer (2011) also assessed the “acceptability of treatment” for both participants and therapist involved in the study (p. 254). They found that both clients and therapist rated the treatment as highly acceptable (Hill, Craighead, & Safer, 2011).

**Improvements in patients with any ED diagnoses.** The study completed by Courbasson, Nishikawa and Dixon (2012) focused on 21 adult women meeting diagnostic criteria for substance use disorder and BED, BN or AN. Participants were split into two groups; treatment as usual and DBT in full. The treatment as usual group had a 20% retention rate after three months and was terminated early due to poor results. However, the DBT group had an 87% retention rate three months into treatment and 60% at follow-up.

Courbasson, Nishikawa and Dixon (2012) found, “Significant improvements in behavioural and attitudinal features associated with disordered eating including reduction in binge eating episodes, bulimic tendencies on the EDI [Eating Disorder Inventory] and eating, restraint and weight concerns on the EDE [Eating Disorder Examination]” (p. 444). The study reported:

...large effect sizes on the following outcomes: binge eating episodes; EDI [Eating Disorder Inventory]-bulimia and maturity scores; EDE [Eating Disorder Examination]-



restraint, eating concern, shape concern, weight concern and global scores; ASI [Addiction Severity Index]-substance composite scores and NMRS [Negative Mood Regulation Scale]-general scores. Moderate effect sizes were observed for EDI-introceptive awareness scores, EES [Emotional Eating Scale]-anxiety scores; DTCQ [Drug-Taking Confidence Questionnaire-Short Version]-alcohol total score, BDI [Beck Depression Inventory]-cognitive, affective and total scores and NMRS-general, behavior and total scores. (p. 441-443)

The second study analyzed was a systematic literature review done by Wanden-Berghe, Sanz-Valero, and Wanden-Berge (2010). The review focused on the use of mindfulness as a stand-alone therapy in treating eating disorders. The study reported that mindfulness-based therapies might be beneficial in the treatment of eating disorders. The review found that, “Positive outcomes were observed for bulimia nervosa, anorexia nervosa, and binge eating disorder” (Wanden-Berghe, Sanz-Valero, & Wanden-Berghe, 2012, p. 42).

### **Comparing Effectiveness among DBT Components and Treatment Modalities**

**Comprehensive DBT.** Three (33%) studies analyzed in this review offered a comprehensive DBT program including individual therapy, skills group, phone-coaching and therapist consult. All yielded positive results. Chen et al. (2015) focused on participants with AN and/or EDNOS. This study reported high retention rates, as well as increased BMI. Courbasson, Nishikawa and Dixon (2012) completed a study with participants diagnosed with BED, BN or AN and substance use disorder. They reported significant improvements in eating disordered behaviors including; binge eating, bulimic tendencies, restraint and weight concerns. Lastly, Fischer and Peterson (2015) provided a comprehensive DBT program to adolescents with BN. This study observed significant decreases in binge eating and purging and also reported that four

out of seven (43%) of participants no longer met criteria for an ED at the 6-month follow-up assessment.

**Radically-Open DBT.** One study (11%) utilized RO-DBT to treat EDs in an inpatient setting. RO-DBT includes adaptations to traditional DBT that focuses on targeting overcontrolled behaviors like restricting versus undercontrolled behaviors like bingeing or purging. Lynch et al. (2013) found that 72% of participants had substantial increases in BMI demonstrating a large effect size. The study also reported that 55% of treatment completers were in full-remission post-treatment and 35% were in partial remission.

**Skills group alone.** Two studies (22%) utilized skills group alone as a format for treatment. Both studies reported positive results. Erb, Farmer and Mehlenbeck (2013) provided skills group to three women with BED. At the end of treatment they reported that two participants were abstinent from binge eating episodes, while the third participant's binge eating had significantly decreased. Lynch et al. (2013) also provided stand-alone skills group focused towards individuals with AN. Post-treatment they reported that 35% of participants were in full remission and 55% were in partial remission. Their study also found a significant increase in BMI from admission to discharge.

**Individual therapy alone.** Two studies provided DBT using strictly individual therapy. Albers (2010) presented a case study of a 19-year-old female with AN who received 15 weeks of individual therapy. Albers reported a decline in restriction, as well as a significant increase in the patient's BMI. Hill, Craighead and Safer (2011) utilized individual therapy in treating 26 women with BN. They reported that after treatment, 61.5% (16/26) participants no longer met full or subthreshold diagnostic criteria for BN.

**DBT self-help guide and phone-coaching.** One study used a DBT self-help guide paired with six supportive phone-coaching calls to treat BED. Masson, von Rasnon, Wallace and Safer (2013) reported that the frequency of binge eating episodes decreased, while quality of life and emotion regulation improved. At post-treatment, the treatment group reported 5.97 binge eating episodes in the past 28 days versus 14.37 for the wait-list group.

**Phone-coaching.** None of these studies used only phone-coaching as a treatment modality. There is no evidence that only phone-coaching would be effective in treating EDs.

**Mindfulness.** Two articles focused on using mindfulness to treat individuals with EDs. Albers (2010) taught mindful eating skills during individual therapy to an individual with AN. She reported a decline in restrictive behavior, increased BMI, as well as improvement in the quality and variety of foods the individual was able to eat. Wanden-Berghe, Sanz-Valero, and Wanden-Berghe (2010) completed a systematic literature review on the use of mindfulness-based therapies in eating disorder treatment. The review included studies that used DBT, mindfulness, acceptance and commitment therapy, and mindfulness based CBT. They reported positive outcomes in the treatment of BN, AN, and BED and posed that mindfulness-based therapies may be effective to treat eating disorders.

**Emotion regulation, distress tolerance and interpersonal effectiveness.** No studies utilized solely emotion regulation, distress tolerance or interpersonal effectiveness skills for the treatment of EDs. Therefore, there is no evidence that utilizing these components separately would be effective in ED treatment. However, these studies have yet to be conducted, so there can be no assessment about whether or not they may be effective.

### **Discussion**

The purpose of this systematic literature review was to analyze the current body of knowledge around utilizing components of DBT in ED treatment. A search was conducted and this researcher along with a committee including two licensed Clinical Social Workers who work with persons with eating disorders and a licensed Social Worker with a doctorate created inclusion and exclusion criteria to find the most relevant and reliable research on the subject. This review analyzed whether and to what degree that DBT might be an effective therapeutic approach in the treatment of eating disorders.

In sum, not only was comprehensive DBT found to be effective in the studies analyzed, but also the mindfulness module alone, as well as DBT offered via different modalities (i.e. skills group versus individual therapy) was also found promising. This review included two (22%) studies that used only individual therapy (one of these two studies only focused on the mindfulness module of DBT), three (33%) studies that offered comprehensive DBT programs, two (22%) studies that utilized a skills group only model, and one (11%) study that used a DBT self-help guide paired with bi-weekly phone coaching. Each of these studies yielded positive results in the treatment of individuals with EDs.

Studies included in this review reported positive results in the treatment of AN, BED, BN and EDNOS. The only eating disorder that was not treated in any of the studies included in this review was ARFID, which is new to the DSM-V and mainly seen in younger children.

Positive results in treating AN were found in three different studies. One study utilized mindfulness alone, a second study used comprehensive DBT and the third study examined RO-DBT as a treatment modality. RO-DBT was adapted to focus specifically on the over-controlled behavior of a client with AN (i.e. restriction), which is an interesting adaptation, because

traditional DBT is often used to target impulsive/undercontrolled behaviors like self-harm, bingeing or purging. All three of these approaches focus heavily on mindfulness so it may be that the component of mindfulness is most important in treating AN. Further research regarding the components of DBT and AN should consider adaptations to DBT like RO-DBT with a primary focus on mindfulness.

BED was treated effectively through the use of a self-help manual paired with phone coaching, as well as a skills group only model. In treating BED, it is interesting that group work, as well as external therapist support seemed most helpful. In skills group, all DBT modules were taught, but these studies found it effective to use only group work or self-help paired with external therapist support. It may be that because of the impulsive nature of binge eating, traditional DBT skills are appropriate and the peer and/or therapist support is helpful in resisting urges and staying accountable in between sessions. Future research may want to focus on treatment models that include the extra support of phone coaching.

Effective results for treating BN were found when using the comprehensive DBT model, as well as stand-alone individual therapy. Similar to BED, behaviors associated with BN are impulsive and undercontrolled in nature (i.e. bingeing and purging), so these studies also suggested that all DBT modules are effective in treating EDs, not just mindfulness as found in the treatment of AN. Future research should consider what setting, modality and length of treatment is most effective considering this research suggests that all modules of DBT should be included.

A study utilizing a comprehensive DBT model yielded positive results treating a variety of EDs. Lastly, a systematic literature review exploring mindfulness-based therapy found positive effects on treating any ED. These studies further support the idea that DBT may be

effective in ED treatment. These studies considered the use of DBT with any ED diagnosis. As discussed above, other studies found that different modalities or modules were more effective with different ED populations. Therefore, further research should continue to study which pieces of DBT work best with what diagnoses and consider what treatment model is most advantageous.

### **Limitations**

First, although DBT has been found to be effective in treating multiple diagnoses, DBT was originally created to treat BPD and that is what the majority of DBT research focuses on. Although clinicians and programs have been branching out and using components of DBT to treat disorders other than BPD, research in the area of eating disorder treatment, especially AN is relatively limited. A major limitation to this study was that after meeting all inclusion/exclusion criteria, only nine studies met all qualifications to be included in this review. It is apparent that much more research needs to occur with all types of EDs using DBT in total, as well as constellations of components and even individual components.

Secondly, in order to boost confidence in the results of this literature review, only peer-reviewed articles were considered. There is likely more research available in grey literature; however, due to exclusion criteria, grey literature was not considered in this review. This limited the amount of research available to study.

In order to maintain specificity in this review, inclusion criteria were fairly detailed. For instance, studies were only included if participants met diagnostic criteria for an ED. Several studies were found that studied the use of DBT in minimizing eating disordered behaviors, but were not included because diagnostic criteria for AN, BN, BED or EDNOS were not met. There were also many studies that examined the effects of DBT paired with another established therapy

model. These were excluded to maintain the focus on DBT specifically, and to ensure that the results were due to DBT treatment alone. For example, a study using mindfulness infused CBT was not included, because it would have been impossible to determine if the results were due to CBT or mindfulness.

### **Future Research**

While this study provided a lot of useful information about the use of DBT components in the treatment of EDs, there is still a lot to learn. One of the biggest inconsistencies seen between treatment programs was the length of treatment provided. Traditional comprehensive DBT follows a one-year model. This review found programs that offered a DBT based program from as little as eight weeks to as long as one year. Further research should focus on the ideal length of treatment. What length of treatment is optimal should also be considered not only when using a comprehensive DBT model, but also when utilizing a specific module or modality of treatment, or combination thereof.

As talked about briefly in this review, different EDs have different symptomology and behaviors. This review focused on primarily quantitative data to address the question of effectiveness. In the future, it would be beneficial to include more qualitative research to assess the different purposes ED behaviors are serving. This information would be helpful in developing differentiated theory that could then allow for tailoring treatment to target maladaptive behaviors and develop alternative coping mechanisms. The study included in this review using RO-DBT, was a great example of adapting DBT in order to effectively target a specific behavior and/or population.

### **Conclusion**

As discussed previously in this paper, current treatments have about a 50% success rate in treating patients with eating disorders. While these approaches have support that they are effective with a large portion of the population, there are still half of persons with EDs who have not been able to recover using these methods. Often these patients have a more complex diagnostic presentation and may even involve comorbidity with another serious and persistent mental illness. For example, one common comorbidity seen with EDs is BPD, which is one reason DBT was examined as a possible alternative treatment approach (Linehan & Chen, 2005). However, for other persons, it may be possible to utilize components of DBT, rather than the entire array of treatment, as a way to target the especially debilitating aspects of their disorder. This less comprehensive and demanding model may speak to those persons who would otherwise drop out of treatment or do not wish to be fully immersed in DBT treatment.

As discussed throughout this review, DBT has yielded positive results in the treatment of EDs. While there is room for further research and future focuses, this systematic literature review poses that DBT, in its comprehensive form or using DBT components separately, may be an effective treatment to EDs.



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## Appendix A

Article	Sample	Design/Method	Relevant Findings
<p>“Using Mindful Eating to Treat Food Restriction: A Case Study</p> <p>by Albers</p>	<p>19-yr-old college female w with anorexia nervosa</p> <p>Initial BMI: 17.9</p>	<p>15 individual therapy sessions focusing on integrating mindful eating skills into session plus keeping a mindful eating journal</p>	<p>-Decline in restriction</p> <p>-BMI raised to 19.5</p> <p>-Improvement of quality and variety of foods</p> <p>-“Mindful eating skills may be a helpful approach in treating medically stable clients who are coping with restriction” (Albers, 2011, p. 105)</p>
<p>“A randomized wait-list controlled pilot study of dialectical behaviour therapy guided self-help for binge eating disorder”</p> <p>by Masson, Von Rasnon, Wallace &amp; Safer</p>	<p>60 eligible participants with BED</p>	<p>Separated randomly into 2 groups: Treatment Group &amp; Wait-list Group</p> <p>Treatment group- Received DBT self-help manual including mindfulness, distress tolerance and emotion regulation</p> <p>Attended one 45 minute orientation, received six bi-weekly 20 minute support phone calls over 13 weeks</p> <p>Both groups assessed initially, after 13 weeks and then only treatment group again after six months</p>	<p>-“Treatment was associated with fewer binge eating episodes at post-treatment than wait list” (Masson, Von Rasnon, Wallace &amp; Safer, 2013 p. 726)</p> <p>-At 13-week assessment, binge eating frequency decreased. At 6 month follow-up, binge eating frequency had increased, but remained lower than baseline</p> <p>-“...reduced binge eating and improved quality of life and emotional regulation at the end of treatment compared to wait-list controls. At six months post-treatment, individuals who had received the treatment continued to report improved outcome on most variables compared to baseline scores” (Masson, Von Rasnon, Wallace &amp; Safer, 2013, p. 727)</p> <p>-“Treatment group member reported much greater quality of life than control group members post-treatment.” (Masson, Von Rasnon, Wallace &amp; Safer, 2013, p.727)</p>
<p>Adapting Dialectical Behavior Therapy for Outpatient Adult Anorexia</p>	<p>Case Series #1: Six adult women meeting AN or EDNOS diagnostic</p>	<p>-Utilized standard DBT manual &amp; DBT for binge eating manual</p> <p>-Individual DBT therapy plus DBT Skills training, 24-hour</p>	<p>-“Both case series had strong retention and the results for BMI in Case Series 2 appear comparable if not better than other outpatient treatments for AN” (Chen et al., 2015, p. 131)</p>

<p>Nervosa—A pilot Study</p> <p>By Chen, Segal, Weissman, Zeffiro, Gallop, Linehan, Bohus &amp; Lynch</p>	<p>criteria</p> <p>Case Series #2: Nine women with AN or EDNOS w/ AN symptoms</p>	<p>phone coaching and therapist consultation team</p> <p>-Treatment length was decided on individual basis between client and tx</p> <p>-Utilized adapted form of DBT</p> <p>-Standard DBT augmented by an early version of a skills module addressing an over-controlled style developed by Lynch et al. to standard DBT</p> <p>-Individual therapy, skills group, 24-hour phone coaching and therapist consult team</p> <p>-Lynch’s 8-week module taught after standard DBT</p>	<p>-“In summary, our results suggest adding skills addressing over controlled emotions and behaviors to standard DBT may be helpful and are enduring although given the study design and limitation these are very tentative conclusions” (Chen et al., 2015, p.131).</p>
<p>The Application of Mindfulness to Eating Disorders Treatment: A Systematic Literature Review</p> <p>by Wanden-Berghe, Sanz-Valero &amp; Vanden-Berghe</p>	<p>-8 Studies- - Inclusion criteria was peer reviewed articles and studies where mindfulness has been used as therapy for eating disorders</p>	<p>-Systematic Literature review</p> <p>-Included DBT, mindfulness, acceptance and commitment therapy, mindfulness-based CBT</p>	<p>-“mindfulness-based therapies may be effective in the treatment of eating disorders. Although trial qualities were variable and sample sizes were small, it is noteworthy that all of the articles that met this study’s criterion reported statistically positive outcomes. Positive outcomes were observed for bulimia nervosa, anorexia nervosa, and binge eating disorder” (Wanden-Berghe, Sanz-Valero, &amp; Vanden-Berghe, 2011, p .42).</p>
<p>A Condensed Dialectical Behavior Therapy Skills Group for Binge eating Disorder:</p>	<p>Five women with ---BED screened and three completed treatment</p>	<p>12 week DBT Skills – Skills Group (2hr/week)</p> <p>-Treatment protocol relied on material from the DBT for binge eating and bulimia</p>	<p>- “The DBT skills group treatment described in this case study resulted in clinically significant reduction of binge eating symptoms for three women with BED. By the end of treatment, two had no objective binges, and one reported objective</p>

<p>Overcoming Winter Challenges</p> <p>By: Erb, Farmer &amp; Mehlenbeck</p>		<p>manual</p>	<p>binges reduced to once per week. Importantly, these gains were maintained and even further improved upon the 1-year follow-up” (Erb, Farmer &amp; Mehlenbeck, 2013, p. 352).</p>
<p>Outcome of Dialectical Behaviour Therapy for Concurrent Eating and Substance Use Disorders</p> <p>By: Courbasson, Nishikawa &amp; Dixon</p>	<p>-Twenty-one adult women who met criteria for ED (BED, BN or AN) and Substance Use Disorder</p> <p>-Randomly assigned to two groups: 13 in DBT and eight in treatment as usual (TAU).</p>	<p>TAU group: -1 year of treatment -1.5 hours weekly group therapy, primarily MI, CBT and relapse prevention strategies used, daily self monitoring, and individual therapy when deemed necessary</p> <p>DBT Group: -1 year of treatment -2hr/week of skills group, individual therapy, phone coaching, daily self-monitoring, therapist consultation</p>	<p>TAU Group- -At 3 months only 20% (2) participants remained -Terminated recruitment for TAU because response to TAU treatment was poor (sometimes worsening) -Because of small size, no significant results and could not be used as comparison analysis</p> <p>DBT Group: -80% retention (12) until after treatment follow-up when retention was 60% (9) -“Significant improvements in behavioural and attitudinal features associated with disordered eating including reduction in binge eating episodes, bulimic tendencies, eating, restrain and weight concerns on the EDE” (Courbasson, Nishikawa &amp; Dixon, 2012, p. 444). -Better retention than TAU group</p>
<p>Dialectical Behavior Therapy for Adolescent binge eating, purging, suicidal behavior, and non-suicidal self-injury</p> <p>By: Fischer &amp; Peterson</p>	<p>-Ten adolescents started, three dropped out within four weeks of starting treatment</p> <p>-Inclusion criteria: presence of objective binge eating episode (within last 4</p>	<p>-Six months outpatient DBT with skills group, individual therapy, phone coaching, therapist consult</p>	<p>-comparable retention rates to other studies with adolescents and EDs w/ DBT -All participants experienced significant decreases in binge eating, purging, and cognitive symptoms of BN/EDNOS across the course of the study. -Three out of seven completers no longer met criteria for ED at 6-month follow up. -Not a goal of the study, but several participants lost weight (contrast to other literature on adults).</p>

	weeks), 1 suicide attempt or SIB in last year, height and weight in or above normal range, age 14-17.		
Radically Open-Dialectical behavior therapy for adult anorexia nervosa: Feasibility and outcomes from an inpatient program  By Lynch, Gray, Hempel, Titley, Chen & O'Mahen	-Forty-seven inpatient adults who met AN diagnostic criteria, particularly restrictive type. -Forty-five females, two male participants. -Ave BMI of 14.33 at intake.	- Inpatient unit where all disciplines are RO-DBT informed and driven. -Skill group was taught in eight week cycles.	-27.7% (13/47) dropout rate -Mean length of treatment for completers was 21.7 weeks. -Of those who completed the program and both admission and discharge evaluations, 35% (7/20) were in full remission and 55% (11/20) were in partial remission -Large reduction on global EDE-Q scores. -Among treatment completers mean BMI went from 14.69 at intake to 18.26 at discharge.
Appetite-Focused Dialectical Behavior Therapy for the Treatment of binge eating with purging: A preliminary trial  By: Hill, Craighead & Safer	-Twenty women reporting at least one binge eating and one vomit episode per week over the previous three months. -All but six met full diagnostic criteria for BN, other met subthreshold criteria.	-Random assignments into two groups: 1) DBT-AF treatment or 2) Six-week delayed treatment control -Treatment group received 12 individual sessions, first six sessions were 90 minutes, which equals 15 hours of treatment over 12 weeks. -Delayed group were offered treatment at the beginning of the 6 <sup>th</sup> week.	-Four of the 26 participants who started treatment dropped out (15.4%) (2 treatment and 2 waitlist participants). -Acceptability rate was very high among participants and therapists. Both would support longer treatment. -At post-treatment seven of 26 (26.9%) participants were abstinent of binge eating and purging, additional four were abstinent on one behavior. -Overall 16/26 (61.5%) no longer met full or subthreshold criteria for BN (26.9% were fully abstinent).