

The Therapeutic Relationship in Dialectical Behavior Therapy: A Longitudinal Investigation in a Naturalistic Setting

Sara Elizabeth Little
Marquette University

Recommended Citation

Little, Sara Elizabeth, "The Therapeutic Relationship in Dialectical Behavior Therapy: A Longitudinal Investigation in a Naturalistic Setting" (2011). *Dissertations (2009 -)*. Paper 160.
http://epublications.marquette.edu/dissertations_mu/160

THE THERAPEUTIC RELATIONSHIP IN DIALECTICAL BEHAVIOR THERAPY: A
LONGITUDINAL INVESTIGATION IN A NATURALISTIC SETTING

by

Sara E. Little, M.S.

A Dissertation submitted to the Faculty of the Graduate School,
Marquette University,
in Partial Fulfillment of the Requirements for
the Degree of Doctor of Philosophy

Milwaukee, Wisconsin

December 2011

ABSTRACT
THE THERAPEUTIC RELATIONSHIP IN DIALECTICAL BEHAVIOR THERAPY: A
LONGITUDINAL INVESTIGATION IN A NATURALISTIC SETTING

Sara E. Little, M.S.

Marquette University, 2011

The quality of the therapeutic alliance in psychotherapy has been found to be positively associated with many treatment outcome variables, such as client retention, client satisfaction in treatment, and improvement in symptoms. While some theorists assume that therapeutic alliance is established early in therapy and remains fairly stable across time in treatment, others such as Safran et al. (1990) suggest that the alliance quality fluctuates across time and is likely to be marked by frequent patterns of rupture and repair. In particular, individuals with Borderline Personality Disorder (BPD) have clusters of symptoms and interpersonal styles that are likely to present challenges to the formation and maintenance of a therapeutic alliance. The present study examines characteristics of the therapeutic alliance in Dialectical Behavioral Therapy (DBT), which is a comprehensive form of cognitive behavioral therapy that has received empirical support for the treatment of chronically suicidal and self-harming individuals with Borderline Personality Disorder. Clients in an outpatient DBT program at a community mental health center completed monthly self-report measures of therapeutic alliance quality and psychiatric symptoms (Beck Depression Inventory-II, Beck Hopelessness Scale, Brief Symptom Inventory), across one year of treatment. It was hypothesized that clients diagnosed with BPD would have greater variability in the therapeutic alliance across time and would be more likely to have patterns of alliance reflecting acute rupture and repair sequences, as compared to clients not diagnosed with BPD. Results indicated that clients with a diagnosis of BPD did not have greater variability of alliance as measured by their range of scores on a self-report alliance measure across time. However, clients with BPD had significantly more frequent episodes of alliance rupture and repair. Treatment outcome analyses suggest that the DBT program was effective in reducing depression, hopelessness, and general psychiatric symptoms. Clinical significance analysis, using the Jacobson and Truax (1991) methodology, was used to classify individual client outcomes, and results indicated that nearly half of the clients in the sample achieved clinically significant "Improvement" or "Recovery" after one year of DBT. Patterns of therapeutic alliance across time were not significantly associated with treatment outcome.

TABLE OF CONTENTS

LIST OF TABLES.....	iii
LIST OF FIGURES.....	iv
CHAPTER	
I. INTRODUCTION.....	1
A. The Therapeutic Relationship.....	5
1. Measurement of the Therapeutic Alliance	
2. Therapeutic Alliance and Treatment Outcomes	
3. Alliance Change Across Time	
B. Dialectical Behavior Therapy.....	16
1. Theory of the Treatment	
2. Structure of Dialectical Behavior Therapy	
3. The Therapeutic Relationship in DBT	
4. Efficacy of Dialectical Behavior Therapy	
5. Summary and Future Directions for DBT Research	
C. Goals of the Present Study.....	58
1. Clinical Significance Analysis	
2. Therapeutic Alliance in DBT	
II. METHOD.....	64
A. Participants.....	64
1. DBT Program and Site Characteristics	
2. Participant Characteristics	
B. Data Collection.....	67
C. Materials.....	68
1. Structured Clinical Interview for DSM-III Axis I Disorders (SCID-I)	
2. Structured Clinical Interview for DSM-IV Axis II Disorders (SCID-II)	

3. Beck Depression Inventory - Second Edition (BDI-II)	
4. Beck Hopelessness Scale (BHS)	
5. Brief Symptom Inventory (BSI)	
6. Combined Alliance Scale (CAS)	
D. Planned Analyses.....	71
1. Missing Data	
IV. RESULTS.....	75
A. DBT Treatment Outcomes.....	75
1. Clinical Significance Analysis	
B. Treatment Outcome by Diagnosis.....	82
C. Therapeutic Alliance Ratings Across Time.....	82
D. Variability in Alliance Ratings by Diagnosis.....	88
E. Alliance Ratings and Treatment Outcome.....	90
1. Data Screening and Assumptions	
2. Results of Doubly Multivariate Analysis of Variance	
V. DISCUSSION.....	98
A. Comorbidity and Sample Characteristics.....	99
B. Client Improvement.....	100
C. The Therapeutic Alliance in DBT.....	104
1. Alliance and Outcome in DBT	
D. Limitations of the Present Study.....	107
VI. BIBLIOGRAPHY.....	110

LIST OF TABLES

Table	Page
1. Frequencies of Diagnoses from the SCID-I and SCID-II.....	66
2. Paired Samples t-tests for Change in BDI-II, BHS, and BSI Scores from Intake to Month 12.....	75
3. Frequencies and Percentages for Clinical Significance Analysis.....	77
4. Descriptive Statistics and Intercorrelations for the Five Subscales of the CAS.....	83
5. Frequencies of Clients with at Least One 10-Point Shift in Alliance Ratings by Subscale.....	87
6. Independent Samples t-tests for Number of 10-point Shifts in Overall CAS Scores and Each of the Five Subscales.....	89
7. Independent Samples t-test for Range of Scores on Each Subscale of the CAS.....	90
8. Descriptive Statistics for CAS Subscales by Month and by Treatment Response.....	91
9. Scale Normality for CAS Subscales by Month.....	93
10. Intercorrelations of CAS Subscales at Months 1, 6, and 12.....	94
11. Doubly Multivariate Analysis of Variance Comparing Alliance Ratings by Improvement Status.....	95

LIST OF FIGURES

Figure	Page
1. Linehan's (1993) Biosocial Theory.....	23
2. Flow Chart for Inclusion and Exclusion of Cases.....	74
3. Scatterplot of the Results of Clinical Significance Analysis for the BDI-II.....	79
4. Scatterplot of the Results of Clinical Significance Analysis for the BHS.....	80
5. Scatterplot of the Results of Clinical Significance Analysis for the BSI-Global Severity Index.....	81
6. Sample Mean Scores for CAS Subscales by Month.....	84
7. Sample Graph of One Client's CAS Subscale Ratings Across Twelve Months.....	86
8. Graph of Bond Scale Scores by Time.....	96

The Therapeutic Relationship in Dialectical Behavior Therapy: A Longitudinal Investigation in a Naturalistic Setting

Theories of psychotherapy differ dramatically from one another, but the common factor uniting almost all forms of successful psychotherapy is the importance of the therapeutic relationship. The relationship formed between a client and therapist in the context of psychotherapy has received much empirical and theoretical attention and has consistently been found to predict the success of treatment. In some forms of psychotherapy, the therapeutic relationship is seen as a means to an end, by creating an environment in which effective therapy can be conducted, while in other theoretical orientations, the formation of a trusting and mutually caring relationship is seen as an end in itself. Across forms of treatment, some subgroups of clients tend to present more challenges to therapeutic progress and alliance development than others, whether this is due to the severity of their symptoms, their interpersonal behaviors and personality characteristics, patterns of responses therapists tend to have their clinical presentation, or some combination of these factors.

Borderline personality disorder (BPD) is one such condition that is perceived by many mental health professionals to be among the most challenging disorders to treat due to the chronicity, severity, and pervasiveness of the symptom patterns. BPD is an Axis II disorder characterized by a constellation of behavioral, cognitive, emotional, and interpersonal problems that can be chaotic, life-threatening, and interfere with the individual's quality of life and pursuit of important goals. The Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition, Text Revision (DSM-IV-TR; APA, 2000) provides the following diagnostic criteria for borderline personality disorder:

“A pervasive pattern of instability of interpersonal relationships, self-image, and affects, and marked impulsivity beginning by early adulthood and present in a variety of contexts as indicated by five (or more) of the following:

- (1) Frantic efforts to avoid real or imagined abandonment (do not include suicidal or self-mutilating behavior covered in Criterion 5).
- (2) A pattern of unstable and intense interpersonal relationships characterized by alternating between extremes of idealization and devaluation.
- (3) Identity disturbance: markedly and persistently unstable self-image or sense of self.

- (4) Impulsivity in at least two areas that are potentially self-damaging (e.g., spending, sex, substance abuse, reckless driving, binge eating). Do not include suicidal or self-mutilating behavior covered in Criterion 5.
- (5) Recurrent suicidal behavior, gestures, or threats, or self-mutilating behavior.
- (6) Affective instability due to a marked reactivity of mood (e.g., intense episodic dysphoria, irritability, or anxiety usually lasting a few hours and only rarely more than a few days).
- (7) Chronic feelings of emptiness.
- (8) Inappropriate, intense anger or difficulty controlling anger (e.g., frequent displays of temper, constant anger, recurrent physical fights).
- (9) Transient, stress-related paranoid ideation or severe dissociative symptoms.”

(APA, 2000, pp. 710)

The diagnostic criteria for BPD describe a constellation of behaviors and interpersonal patterns that, if they occur in the therapeutic relationship, are likely to make formation and maintenance of a healthy therapeutic alliance difficult. For example, patterns of relationship instability, alternating idealization and devaluation, and frantic efforts to avoid abandonment are likely to create a volatile interpersonal situation in the therapeutic relationship. Clients with BPD may desire closeness and intimacy with the therapist, while the associated vulnerability activates the clients' fears of abandonment and can lead to expressions of hostility and anger toward the therapist (Linehan et al., 2000). Also, transient paranoid ideation may interrupt a client's ability to develop and maintain trust in his or her therapist. Dissociative symptoms, if they occur in session, may interrupt a client's ability to engage in exposure exercises or engage in the emotional experiencing necessary for most forms of psychotherapy. Other symptoms such as impulsivity, and recurrent suicidal ideation and self-harming behaviors can lead to frequent crises or hospitalizations that disrupt the continuity and stability of therapy. Attending to frequent crises, especially outside of the usual therapy hour, may also lead therapists to extend themselves beyond their preferred limits and increase the risk of professional burnout or resentment (Gunderson, 1996). Finally, symptoms of affective instability, and dysregulated anger, can lead to an intense, emotionally-charged therapeutic environment in which a client may be prone to engaging in hostile outbursts at the therapist. The therapist may in turn be prone to engaging in problematic behaviors such as avoiding topics that he or she believes may upset the client, thereby missing

opportunities to be helpful to the client (Dimeff & Linehan, 2001). Given this constellation of symptoms, it is no surprise that forming and maintaining a therapeutic alliance may be difficult, both from the perspective of the therapist and of the client. It is not suggested in this essay that the challenges to the alliance in treatment of BPD are the fault of the client, or even that problems arising in treatment are solely due to intrinsic characteristics of the client. Rather, it is suggested that problems arising in the therapeutic alliance are due to transactions between the therapist and client, including therapists' personal characteristics, clients' reactions to behaviors of the therapist, and therapists' responses to client behaviors.

BPD, as defined by the DSM-IV-TR diagnostic criteria, is a heterogeneous category. With only five of the nine criteria necessary for diagnosis of BPD, 151 different symptom combinations are possible, leading to great variability in the clinical presentation of this disorder. BPD is estimated to affect approximately 0.2-1.8% of the general population, 8-11% of clients receiving outpatient psychotherapy, and 14-20% of the inpatient psychiatric population in the United States (Widiger & Weissman, 1991). BPD is diagnosed most commonly in women (75 - 76%; APA, 2000; Widiger & Weissman, 1991) and research suggests that the symptoms are typically most severe in early adulthood with some improvement in most cases by their 30's or 40's, especially in terms of reduced behavioral impulsivity (Stevenson, Meares & Comerford, 2003). Symptoms of affective instability, dysphoria, feelings of emptiness, problems with interpersonal dependency, and fears of abandonment appear to be more treatment-resistant and stable across the lifespan (Zanarini, Frankenburg, Reich, Silk, Hudson & McSweeney, 2007). In longitudinal studies, it has been found that fifteen years after an initial assessment, approximately 25-44% of individuals diagnosed with BPD still met diagnostic criteria for the disorder, not controlling for the amount of treatment, if any, received between assessments (McGlashan, 1986; Paris et al., 1987).

Individuals with BPD are high utilizers of the mental health system, and often spend many years in some form of mental health treatment because of the severity of their symptoms and high risk of suicide or serious self-harm. In particular, there is a high rate of utilization of

crisis interventions and acute psychiatric services such as inpatient psychiatric stays, participation in day treatment or partial hospitalization programs, and visits to the emergency room following self-harm incidents (e.g., cutting, overdosing on medication). The high utilization of inpatient hospitalization has been attributed to the high rates of self-harm and suicide attempts among individuals with BPD, as well as the inadequacy of most traditional forms of outpatient treatment in the community to meet the needs of these individuals (Linehan, Kanter & Comtois, 1999). Outpatient psychotherapy for BPD tends to be very long-term, and the standard treatment provided in the community has traditionally been only moderately effective.

The prognosis for individuals with BPD was once considered to be quite poor due to the relative lack of effective treatments, but there has been a shift in the past 15-20 years toward greater research focus on the development of effective inpatient and outpatient therapies for the treatment of this disorder. One of the most promising therapeutic approaches to have gained empirical support for treatment of BPD is Dialectical Behavior Therapy (DBT; Linehan, 1993). DBT is currently considered by many in the mental health field to be the “gold standard” of evidence-based treatment for BPD. According to the American Psychiatric Association practice guidelines, DBT and psychodynamic treatments (specifically the mentalization-based partial hospital program developed by Bateman and Fonagy, 1999) are the primary forms of treatment that should be considered for clients with BPD, as these treatments have been rigorously tested and found to be efficacious in randomized-controlled studies (APA, 2001). The following review of literature will focus on the therapeutic alliance broadly, as it relates to processes and outcomes in psychotherapy, and will then investigate characteristics of the therapeutic alliance that are unique to the treatment of Borderline Personality Disorder. In particular, this study will focus on patterns of alliance development in Dialectical Behavior Therapy.

The Therapeutic Relationship

Since as early as the 1900s, the role of the therapist-client relationship in psychotherapy has been debated across diverse theoretical traditions and forms of psychotherapy. Freud was the first to formally address the concept of the therapeutic relationship in his early writings on psychoanalysis (Freud, 1958/1913). Within a psychoanalytic framework, the client-therapist dyad is seen as a context within which the client's transference is enacted and can be analyzed. With neurotic clients in psychoanalysis, it is assumed that the transference reactions to the therapist are based on past relationships and maladaptive views of self and other, rather than realistic reactions to a here-and-now relationship between the therapist and client. Adherents to traditional psychoanalytic theory view the role of the therapist as a "blank slate" onto which the patient can project his or her own fears, needs, desires, beliefs, and fantasies, and correspondingly, therapists in this theoretical orientation are discouraged from self-disclosure with their clients (Frieswyck et al., 1994). It is also common in psychoanalysis for patients to recline on a couch with the therapist sitting out of eyesight, further reducing the amount of personal presence the therapist has in the relationship. In addition to transference reactions, Freud also briefly addressed the importance of the more rational, adaptive, and present-focused elements of the therapist-client relationship that can facilitate the therapeutic work. Freud emphasized the importance of analysts' expressing respect, interest, and sympathy for the client's experience in order to enhance engagement in the treatment and decrease resistance to interpretations of unhealthy aspects of the transference (Freud, 1958/1913).

Later psychoanalytic writers further developed conceptualizations of the adaptive elements of transference and other facets of therapist-client relationships. For example, Zetzel (1956) introduced the term "therapeutic alliance" to describe elements of transference that are healthy and contribute to a client's ability to participate effectively in therapy. Zetzel conceptualized the alliance as including a form of emotional attachment to the therapist that is based upon early attachment experiences and is dependent upon the capacity of the client to engage in trusting relationships. She believed that a strong alliance between the patient and

analyst was necessary in order for the patient to be able to bear the stress of analysis (Hilsenroth, Peters & Ackerman, 2004; Zetzel, 1956). Zetzel's conceptualization of the alliance bridged the early theories of transference and later conceptualizations of the alliance as a real relationship based in present moment interactions between therapist and patient (Bordin, 1979).

Greenson (1965) took Zetzel's concept of alliance one step further by completely separating the "alliance" aspects of the relationship from the transference aspects. Greenson introduced the term "working alliance" to describe the adaptive, rational, and present-based interactions between the client and therapist. Whereas transference reactions occur when the client is relating to his or her mental representation of the therapist rather than the therapist as a complete and real human being, the working alliance instead emphasizes a "real relationship" in which both the therapist and the client bring their personal characteristics and contributions to the relationship, creating a genuine style of interaction based in real transactions between the two people. Greenson's theory of the working alliance also took into account the client's capacity to work meaningfully and productively in therapy. Like Zetzel (1956), Greenson theorized that a sufficient working alliance was a necessary component of any effective psychotherapy.

Gunderson, a modern psychoanalytic theorist, has proposed that the alliance may develop in differing ways depending upon the stage of the therapist and client's work together. He theorized three distinct stages of therapy that are characterized by differing elements of the alliance relationship taking precedence (Gunderson, 1996). The first is a "contractual" phase in which initial agreements, goals, and roles are defined between the client and therapist. The second phase is the "relational" stage, in which the client develops an emotional attachment to the therapist and comes to view the therapist as warm, interested, genuine, and understanding. The final phase is the "working" phase, during which the patient collaborates actively with the therapist in learning to understand him or herself (Gunderson, 1996).

Carl Rogers (1957) was one of the first influential figures outside of the psychoanalytic tradition to advance a conceptualization of the therapeutic relationship. Rogers' person-centered model of psychotherapy considered the alliance to be a vital and active component of successful

therapy. Within Rogers' theory, healthy therapist-client relationships are conceptualized as inherently healing to the client when certain conditions are met. Specifically, the quality and the therapeutic value of the relationship depends upon the therapist's ability to be empathic and "congruent" (i.e., authentic, genuine) with the client, while providing unconditional positive regard toward him or her.

In the 1960s and 1970s, theorists began to develop conceptualizations of the therapeutic relationship that were not informed by any particular theoretical tradition, and could be applied across many diverse forms of treatment. These conceptualizations are often referred to as "generic" or pantheoretical models of therapeutic alliance. Among the most influential of these models is Bordin's (1979) division of the alliance into three distinct elements of agreement on goals, agreement on tasks, and emotional bond. Goals are defined as the broad outcomes the therapist and client hope to accomplish in the therapy, and tasks are the associated in-session behaviors and specific therapeutic techniques that move the client closer to attaining these goals. The bond is defined as the warmth, mutual liking, and emotional connection between therapist and client. Bordin (1979) theorized that the therapeutic alliance functioned as a facilitator for therapeutic work, but could also be an inherent agent of change.

In the 1980's, Orlinsky and Howard elaborated upon Bordin's theory by further parsing out three sub-components of the therapeutic bond. Consistent with Bordin's (1979) model, Orlinsky and Howard's (1986) model first recognizes agreement on goals, agreement on tasks, and the therapeutic bond as the three main components of the alliance. At a more detailed level of analysis, the therapeutic bond itself is theorized to be made up of three distinct elements: role investment, empathic resonance, and mutual affirmation. Role investment describes the motivation, energy, and resources the client invests in his or her participation in therapy. Empathic resonance refers to the client's sense that his or her behaviors, thoughts, and feelings are understood by the therapist. Mutual affirmation refers to the client's perception that the therapeutic work is conducted in a respectful, warm, accepting manner and that he or she is liked by the therapist (Orlinsky & Howard, 1986).

Most modern conceptualizations of therapeutic relationship in research and in practice continue to emphasize pantheoretical conceptualizations such as Bordin's (1979) and Orlinsky and Howard's (1986). In the past decade, the alliance literature has shifted toward the prediction of therapeutic outcomes and empirically investigating the role of the alliance in diverse modalities of treatment and with specific client populations. In this way, current models of the therapeutic alliance "bridge the gap between the traditional dichotomy of process and outcome variables" (Horvath & Symonds, 1991, pp. 139) by emphasizing both the quality of the relationship, as well as its impact on progress toward the goals of therapy.

Prominent researchers and theorists from several of the major theoretical schools of psychotherapy have written about the role of the therapeutic relationship in their respective modes of therapy (e.g., cognitive therapy: Wenzel, Chapman, Newman, Beck & Brown, 2006; behavioral therapy: Linehan, 1988, 1994; Swales & Heard, 2007; psychoanalytic therapy: Frieswyk, Gabbard, Horwitz, et al., 1994; client-centered therapy: Rogers, 1957). In general, cognitive and behavioral theorists tend to view the role of the alliance as a facilitator for the therapeutic work but not a sufficient condition for a client to improve in therapy. The goal for the alliance in most cognitive-behavioral treatments is to create a collaborative relationship and a warm, encouraging environment in which specific therapeutic techniques can be delivered, and new learning and practice can take place (Swales & Heard, 2007).

Despite differences in terminology or nuances of theory across therapeutic orientations, some level of consideration of the therapeutic relationship is nearly universal. The alliance is often referred to as a "nonspecific" factor that influences the effectiveness of practically all forms of psychotherapy, and some general conclusions about the elements of successful alliances can be made. For example, it is generally assumed that a congenial and collaborative relationship between the client and therapist is desirable in order to make the client more comfortable and to increase his or her motivation and ability to fully participate in treatment.. In the following section, strategies and tools for measuring the quality of the alliance will be reviewed. The role of the alliance as a predictor of outcome across forms of treatment will also be reviewed, and

antecedents to the formation of a positive therapeutic relationship will be discussed. To avoid confusion and to be most consistent with research, in the following the term “therapeutic alliance” (versus “relationship”) will be utilized.

Measurement of the Therapeutic Alliance

Measurements of the alliance can be obtained from client self-report questionnaires, therapist-report forms, observational codings of therapy tapes by trained clinical raters, or some combination of these. Ratings of the therapeutic alliance through each of these methods have been found to have adequate reliability and validity for outcome research. The Working Alliance Inventory (Horvath & Greenberg, 1989), the California Psychotherapy Alliance Scale (CALPAS; Marmar, Weiss & Gaston, 1989), and the Penn Helping Alliance Questionnaire (HAQ; Alexander & Luborsky, 1986) are among the most frequently used client-report measures of alliance in research and clinical settings. Client-report measures of alliance may be the preferred method due to ease of administration, and moderately better predictions of outcome variables than therapist or observer ratings (e.g., Bachelor & Horvath, 1999; Horvath & Symonds, 1991). When therapist and client reports of alliance quality are compared for a dyad, the ratings are typically moderately correlated, but therapists tend to overestimate some elements of the alliance such as the emotional bond (Clemence et al., 2005; Hatcher, Barends, Hansell & Gutfreund, 1995). Observer-coded alliance rating is much more time-intensive but adds a qualitatively different perspective on the alliance, and may be most useful when used in tandem with client or therapist report forms (Horvath & Symonds, 1991). Given that therapist and client ratings tend to differ and client ratings are the best predictor of alliance, it is important for therapists to attend to and regularly monitor client’s perceptions of the alliance. Therapists who have access to regular data from client self-report of symptoms and alliance quality have been found to have better rates of client retention, and are more likely to achieve positive treatment outcomes (Whipple et al., 2003).

Therapeutic Alliance and Treatment Outcomes

Research has consistently found a significant association between the alliance and therapy outcome, with small to moderate effect size ($r = .20$ to $.30$; Hilsenroth et al., 2004). The

quality of the alliance has been associated with: global estimates of therapeutic success (Luborsky, Crits-Cristoph, Alexander, Margolis & Cohen, 1983), symptom reduction on structured measures (Horvath & Greenberg, 1989; Marziali, 1984; Safran & Walner, 1991), improved interpersonal functioning (Gaston, Piper, Debbane, Bienvenu & Garant, 1994), and client satisfaction and perceptions of the helpfulness of therapy (Clemence, Hilsenroth, Ackerman, Strassle & Handler, 2005). Martin, Garske, and Davis (2000) performed a meta-analysis of 58 published and 21 unpublished studies of the relationship between therapeutic alliance and treatment outcome, which found an overall moderate but consistent correlation. This relationship between alliance and treatment outcome did not appear to be influenced by other moderating variables such as type of outcome measure used, the timing of the alliance measurement, theoretical orientation of the therapy, or the person providing ratings of outcome and alliance (e.g., client self-report, therapist ratings, coding by a third party). The overall weighted alliance-outcome correlation was .22 ($n = 68$, $SD = .12$). In a previous meta-analysis of more than 100 studies on the link between alliance and outcome in therapy, Horvath and Symonds (1991) found a similar overall effect size of .26.

Client and therapist characteristics predicting the quality of alliance. The majority of research on antecedents of the therapeutic alliance focuses upon client characteristics; however, it is important to note that the therapist's personal characteristics and manner of behaving in interpersonal interactions also play a significant role in alliance quality (Kivlighan, Patton & Foote, 1998). Therapist characteristics that have been found to be related to the working alliance include adequacy of their own social and professional social support networks (Cutrona & Russell, 1987), comfort with intimacy (Mallinckrodt, Coble & Gantt, 1995), level of experience in performing psychotherapy (Mallinckrodt & Nelson, 1991), and interpersonal style of interaction with the client, especially in regards to therapists' ability to grant autonomy to the client and refrain from behaviors that are perceived as controlling, distancing, blaming, or hostile toward the client (Henry, Schacht & Strupp, 1990).

Client characteristics that significantly predict the quality of the therapeutic alliance often relate to broad interpersonal styles. For example, certain classes of interpersonal problems predict deficits in the quality of the bond element of the alliance (Bender, 2005; Saunders, 2001). Clients who are overly detached (i.e., find it hard to be open and intimate with others), or have low self-esteem tend to form poorer therapeutic bonds. Specifically, clients with preexisting low self-esteem are less likely to believe that their therapist feels warmly and affectionately toward them, and are less likely to report feeling understood by their therapists (Saunders, 2001). Clients who have a low comfort level with intimacy tend to rate significantly more positive working alliances with experienced versus novice therapists (Kivlighan, Patton & Foote, 1998). Notably, the severity of clients' symptoms and subjective distress upon entry into therapy have been found to be uncorrelated with the quality of the therapeutic bond (Saunders, 2001).

Alliance Change Across Time

The timing of alliance ratings is also an important factor to consider when evaluating alliance-outcome studies. Most often, the earliest phase of the alliance is given the most attention (i.e., within the first 3-4 sessions), as this reflects the initial formation of the relationship. There is evidence suggesting that the quality of the alliance remains relatively stable across time in treatment, and measurements taken at any given time-point are sufficient for predicting therapeutic outcome. In one study, 83% of patients were found to have stable patterns of alliance across time with little fluctuation (Hilsenroth, Peters & Ackerman, 2004). Luborsky et al. (1983) similarly found that early observer-rated alliance predicts observer-rated alliance late in therapy, suggesting that alliance quality is relatively stable. According to the results of a large-scale meta-analysis (Martin, Garske & Davis, 2000), clients view the alliance as even more stable across sessions than do their therapists and independent observers. Finally, meta-analytical data compiling many studies on alliance data, suggests that the timing of the measurement of the alliance does not affect its predictive ability for treatment outcome variables (Klein, Schwartz, Santiago, Vivian, et al., 2003).

In contrast, other researchers argue for the importance of ongoing assessment of the alliance to gain the best understanding of how therapist-client relationships develop over time. For example, Safran and Muran (2000) suggest that the meta-analytic data on the course of the alliance across time may be misleading, as mean scores for alliance are used and this averages out any shifts in alliance quality that may occur periodically, leaving only a pattern of small but steady increase in bond quality. This phenomenon has been confirmed in another meta-analytic study (Horvath & Symonds, 1991) which found averaged alliance ratings (across multiple time-points) to be weaker predictors of outcome, possibly because of the loss of information about between-session fluctuations in the alliance. It appears likely that incremental data can be acquired by taking multiple measurements of alliance throughout different stages of treatment, and attending to patterns and periods of change that may indicate ruptures and repairs in the relationship.

Rupture and repair in the alliance. Safran and Muran (2000) hypothesized that fluctuations in alliance quality are likely to occur in the middle phase of therapy due to ruptures and repairs in the relationship between the therapist and client. Alliance “ruptures” are defined as increased tension in the therapeutic relationship, a negative shift in the quality of the existing alliance, or difficulty establishing a relationship in therapy (Safran & Muran, 2000). The concept of alliance rupture has been theoretically compared to the psychoanalytic concept of resistance. Although both terms may describe similar phenomena in therapy sessions (e.g., client withholding relevant information from the therapist, client missing sessions after a difficult session), the primary difference is that ruptures are considered to be an interactive process that both therapist and client contribute to, as opposed to resistance which is typically viewed as arising from the client’s internal processes (Samstag, Muran & Safran, 2004). Alliance ruptures are considered to be an inevitable event in therapy (Samstag et al., 2004), and can be opportunities for positive change in therapy. For example, successfully resolving an alliance rupture in session could provide a healthy model of conflict resolution and resiliency in a

relationship and can disconfirm a client's dysfunctional beliefs or schemas about interpersonal relationships (Safran, Crocker, McMain & Murry, 1990).

Alliance ruptures can take many forms, based upon the type of therapeutic event that prompts the rupture and the subsequent reactions of the client. Consistent with Bordin's (1979) pantheoretical model, ruptures can occur in the three broad components of the alliance: disagreement about goals of therapy, disagreement about in-session tasks, or strains in the emotional bond (Safran, Muran, Samstag & Stevens, 2002). Client responses to ruptures are theorized to fall into two major types: withdrawal and confrontation (Safran & Muran, 2000; Samstag, Muran & Safran, 2004). Examples of withdrawal in session include withholding of information from the therapist, reduced eye contact, missing sessions, or insisting that "nothing is wrong" despite clear expressions of negative affect. Confrontation, on the other hand, may take the form of sarcasm, criticism of the therapist, and signs of hostility or aggression in session. Within the theoretical framework of alliance ruptures, these client behaviors would be treated not simply as problematic responses or resistances on the part of the client, but instead as indications of a transactional problem between therapist and client that needs to be addressed in order to repair the alliance. Gelso and Carter (1994) theorized that the alliance is most central to the therapy in the beginning of treatment, when alliance is first forming, and the end of therapy when termination issues arise. In the middle phase of therapy, Gelso and Carter (1994) propose that the importance of the alliance fades into the background, returning to importance only in times of crisis or when misunderstandings occur in the therapeutic relationship and the alliance needs to be directly worked on in treatment. This is consistent with Safran and Muran's (2004) theory of rupture and repair cycles being most frequent in the middle phases of therapy.

Several studies have used repeated-measures designs to examine the quality of the alliance at different timepoints in treatment, identify subtypes of alliance profiles (i.e., patterns of development of alliance across time), and examine relationships between alliance profiles and therapy outcome variables. Kivlighan & Shaughnessy (2000) found three distinct profiles of alliance change across time in a general outpatient population: (1) stable alliance with little

change across time, (2) a linear growth pattern with increasing strength of alliance across sessions, and (3) a quadratic growth, or U-shaped pattern with highest alliance ratings at the beginning and end of treatment and decreased alliance quality in the middle phase. Clients with the quadratic U-shaped alliance pattern had better therapy outcomes than the others. In a later study with similar methodology, Stiles et al. (2004) found four distinct patterns of alliance development across time: (1) stable alliance with little change across time, (2) positively sloped change with minimal variability, (3) high session-to-session variability with an overall slight inverted U-shape (highest alliance quality in the middle phase of therapy), and (4) a shallow U-shape (highest alliance quality at the beginning and end of treatment). In contrast to the Kivlighan and Shaughnessy (2000) study, Stiles et al. (2004) found no differences in therapy outcome by alliance profiles.

In addition to examining the broad pattern of alliance growth across the duration of treatment, Stiles et al. (2004) examined session-to-session changes in alliance ratings for a finer level of analysis. They found a subset of clients with acute rupture-repair sequences, indicated by deep V-shaped deflections in the alliance quality over a small number of sessions. Clients with these V-shaped deflections were found to have better treatment outcomes than the rest of the sample, regardless of their broad alliance profile. This finding is consistent with Safran and et al.'s (1990) theory that the process of repairing ruptures in the alliance can provide important therapeutic opportunities and contribute to a client's improvement in treatment. Similar patterns of acute rupture and repair in alliance quality have been identified in other studies. For example, Stevens (2002) found that about half of a sample of therapist-client dyads had notable V-shaped deflections in alliance quality, but unlike the Stiles et al. (2004) study, these rupture and repair sequences did not differentially predict therapy outcome.

It remains unclear why some clients report more frequent rupture and repair sequences with their therapists than do others, or why there is variability across therapist-client dyads in the trajectory of their alliance development across time. In general, the alliance literature has tended to utilize diagnostically heterogeneous clinical samples and short-term treatments of unspecified

theoretical orientation. Future research is needed to identify client, therapist, and treatment factors that contribute to alliance patterns across time. For instance, it is realistic to expect that a therapist-client dyad that has been working together in long-term treatment for a number of years would report a different quality and pattern of alliance changes as compared to a therapist-client dyad engaging in a brief, symptom specific treatment such as a structured exposure therapy for a specific phobia. It is likely that several factors such as a client's diagnosis, the interpersonal fit between a therapist and client, and the nature of the therapeutic intervention would all affect the client's perception of the alliance. However, at present there is limited empirical evidence about the impact of such factors on the patterns of alliance change across time.

The present study will examine patterns of therapeutic alliance quality and change across time in Dialectical Behavior Therapy specifically. The following section will review the theoretical underpinnings of DBT, discuss the conceptualization of the therapeutic alliance in the treatment, and review DBT strategies for addressing problems in the formation and maintenance of the therapeutic alliance with clients with borderline personality disorder and other forms of mental illness characterized by chronic emotional dysregulation and impulsivity.

Dialectical Behavior Therapy

Dialectical Behavior Therapy (DBT) is an intensive, manualized form of cognitive-behavioral therapy that integrates elements of dialectical and Zen philosophies. DBT was developed and disseminated in the early 1990's by Dr. Marsha Linehan of the University of Washington for the treatment of chronically suicidal outpatient clients with borderline personality disorder.

Linehan (1993, 1994) has written that DBT in its current form arose from her largely unsuccessful attempts to use traditional cognitive-behavioral approaches with clients with borderline personality disorder in the 1970's. Linehan (1993) indicated that she experienced frequent ruptures in the therapeutic relationship with clients with BPD, arising from these clients feeling invalidated by a strict cognitive behavioral approach. Because of the emotional reactivity of clients with BPD, and their tendency to be very sensitive to cues of rejection or criticism, Linehan suggests that the therapists' identifying "irrational" beliefs and suggesting new behaviors was often perceived by clients as blaming, minimizing or insensitive, and clients in turn responded by verbally attacking the therapist, withdrawing from treatment, or vacillating between the two (Dimeff & Linehan, 2001; Linehan, 1994).

The second major problem in applying cognitive-behavioral techniques to BPD was that therapists were often reinforced by dysregulated clients for unhelpful behaviors such as backing away from painful topics or not maintaining behavioral contingencies lest the client become upset (Dimeff & Linehan, 2001; Linehan, 1993). In this way, therapists began to deliver less helpful therapy over time in an effort to keep the client engaged in therapy and avoid negative emotional expressions in session.

Finally, Linehan found that it was nearly impossible to teach the needed behavioral skills in individual therapy because crises often arose that interfered with or preempted the acquisition and practice of new skills. It was simply too difficult (on the therapist's part *and* the client's) to shift the focus to skills training when current life problems appeared urgent. From these early

treatment failures, Linehan came to conceptualize DBT in a theoretical model that better fit the needs of chronically suicidal individuals with borderline personality disorder. While a strong cognitive-behavioral foundation is still central to the treatment, Linehan refocused the treatment to provide a better balance of acceptance and change strategies.

Theory of the Treatment

In the development of DBT, Linehan adapted her approach to better suit the unique needs of clients with BPD by integrating elements from other established therapeutic approaches (e.g., Gestalt, Rogerian, Systems, psychodynamic; Heard & Linehan, 1994; Koerner & Linehan, 1997), and adding mindfulness practice and a dialectical philosophy to the core cognitive-behavioral strategies. Linehan (1993) theorized that by adding elements to DBT that emphasize validation and acceptance of the client, the change strategies of traditional CBT would be more successful and clients' motivation in therapy would be enhanced. Acceptance and change strategies are intended to be balanced by the therapist in his or her case conceptualization and interactions with the client by emphasizing the validity of the client's experience while also consistently pushing for new, more functional behaviors. Acceptance strategies are also taught to the client as a means to decrease emotional dysregulation and increase self-validation and compassion. The key theoretical underpinnings of DBT include behavioral and social learning theories, dialectical philosophy, mindfulness theory and practice, and Linehan's (1993) biosocial theory of the etiology and maintenance of BPD. These theories and their contribution to DBT will be described in more detail below.

Dialectics and Zen influences. Dialectical philosophy refers to a process whereby an initial proposition or statement (thesis) is presented, a negation or contradiction of the thesis arises (antithesis), and the tension between the thesis and antithesis is resolved through a synthesis of the two ideas (Heard & Linehan, 1994; Linehan & Schmidt, 1995). As it is applied in DBT, the dialectical philosophy puts forth the assumption that there is no one absolute truth, as "truth" is contextual and change naturally occurs with time. Elements that appear to be polar opposites are viewed as polarities of a related dimension that can be integrated at a higher level of

organization (Fraser & Solovey, 2007). Whereas clients with borderline personality disorder tend to think in extreme “black and white” or “all or nothing” ways (Kernberg, 1976; Lynch et al., 2006), a dialectical worldview encourages the client to see the true and valuable parts of both sides of the polarity and to find the synthesis to resolve the perceived contradictions rather than becoming stuck in one extreme or polarized point of view. The central dialectic in DBT involves the tension between acceptance and change in treatment and in the lives of patients with BPD.

Mindfulness. Mindfulness is practiced by both clients and therapists in DBT.

Mindfulness refers to the practice of bringing intentional awareness to one’s experience in the present moment, in a nonjudgmental or compassionate way, and accepting reality as it is rather than fighting against it or attempting to push painful experiences away (Bishop et al., 2004). The concept of mindfulness includes elements of attention regulation as well as acceptance and openness to experience. Through mindfulness practice, clients practice fully participating in their emotional experiences, as opposed to engaging in avoidance or escape behaviors, and accept that their experience is not “good” or “bad,” but just is as it is and can be accepted or tolerated (Lynch, Chapman, Rosenthal, Kuo & Linehan, 2006). The type of mindfulness practice taught in DBT is primarily derived from Zen Buddhism, but is also compatible with other Eastern philosophical and Western contemplative practices (e.g., many forms of meditation and Christian Contemplation; Linehan, 1994). One crucial function of mindfulness practice is to increase awareness of emotional experiences (e.g., body sensations, ability to recognize signs of emotional arousal, action urges), and encourage the client to observe these experiences in the manner of an interested but detached observer. Similarly to exposure and response prevention, this style of mindfulness practice teaches clients that strong emotions and impulses can be experienced without a loss of control or the initiation of a crisis (Swales & Heard, 2007).

Biosocial theory of borderline personality disorder. Linehan (1993) developed the biosocial theory as a transactional model of the etiology of BPD. It is assumed that the patterns that lead to the development of BPD have their roots in early childhood experiences and neurobiology, and the precursors to the disorder are present by childhood or adolescence

(Crowell, Beauchaine & Linehan, 2009). The biosocial theory, consistent with a developmental psychopathology perspective, emphasizes the respective contributions of child and caregiver characteristics, environmental context, and the transactions among these factors across time (Crowell, et al., 2009; Linehan, Kanter & Comtois, 1999). Individual differences such as temperament, genetics, and early biological development are believed to be predisposing factors for the emotional dysregulation that underlies BPD. When children with high vulnerability to emotion are chronically exposed to high-risk environments, such as family environments high in emotional invalidation, neglect, or abuse, patterns of emotional dysregulation are exacerbated and maintained into adulthood and the likelihood of developing BPD is increased (Linehan, 1993).

Emotion dysregulation is defined as a state of high emotional arousal that is sufficiently aversive or overwhelming to interfere with the ongoing cognitive and behavioral functioning of the individual (Koerner & Linehan, 1997). Emotion dysregulation entails a complex set of responses to emotional arousal, including the person's subjective experience of emotion, biochemical changes in the brain, physiological changes (e.g., heart rate, muscle tension, body temperature), thoughts and alterations in cognitive processing, and behavioral impulses (e.g., to attack when angry, to withdraw when sad; McMain, Korman & Dimeff, 2001). The biosocial theory hypothesizes that individuals with borderline personality disorder are prone to emotional dysregulation because they have a biological inclination towards emotional sensitivity, reactivity, and a slow return to emotional baseline after an upsetting event. Thus, individuals with BPD will tend to experience emotional arousal to a broader range of stimuli than would the average person, and their emotional responses will be more intense and longer lasting.

The symptoms of BPD are largely believed to arise from a core pattern of persistent emotional dysregulation and a lack of sufficient skills for modulating emotional arousal. Impulsive and self-harming behaviors are conceptualized as attempts to regulate strong, aversive emotions in the absence of more adaptive means of self-regulation; however, these behaviors create additional problems by generating new crises and perpetuating the individual's emotional pain in the long-term (Koerner & Linehan, 1997). For example, self harm, suicidality, substance

use, and many other forms of impulsive behavior are conceptualized as maladaptive attempts to escape, shorten, numb, or avoid painful dysregulated emotions. Individuals with BPD are believed to lack the necessary capacities to manage their emotional dysregulation effectively, or lack the ability to apply the self-regulation skills they do have or engage in healthy behavioral responses in the presence of strong emotions. Individuals who develop BPD may not know how to effectively self-soothe, negotiate challenging interpersonal interactions, or accurately identify, label and tolerate their internal experiences. These emotion management skills may not be taught, encouraged, or modeled in a chaotic or invalidating family environment (Crowell et al., 2009).

BPD is hypothesized to arise from the transaction of these emotional vulnerabilities with a chronically invalidating environment. Individuals with BPD often report chronic emotional invalidation from their families and social environments either through outright abuse and neglect, or more subtly, through a poor fit between a child with high emotional sensitivity and an environment that does not meet his or her needs for emotional understanding and validation (Fruzzetti et al., 2005; Linehan, 1993). For example, caregivers and others in the environment may invalidate the child's expression of emotion as excessive and communicate to the child that his or her emotional experience is somehow wrong or undesirable.

Invalidation does not necessarily imply cruel or malicious intention, but instead can fall on a continuum from subtle, even inadvertent, dismissive remarks to outright abuse and neglect. Invalidation may take the form of rejecting, trivializing, critical, inappropriate, or erratic responses to the individual's behavior or communication of his or her thoughts, feelings, and desires. For example, a child may be criticized or punished for engaging in normal, developmentally appropriate behaviors, or the parent may minimize the difficulty of certain tasks while also refraining from providing the emotional and instrumental support necessary for the child to succeed (Fruzzetti et al., 2005). In addition, an invalidating environment may provide intermittent reinforcement for problematic behaviors and extreme expressions of emotion, thus strengthening these maladaptive responses of the child (Linehan, 1993).

The transaction between the individual and the environment is complex, and it is hypothesized that many combinations of emotional vulnerability and family environments can lead to the development of BPD. For instance, some individuals who develop BPD may have had normative temperament and emotional functioning as infants and young children, but through chronic, pervasive abuse, neglect, or invalidation, the individual developed heightened emotional vulnerability and may have experienced changes in their emotion related neurobiology over time (Crowell et al., 2009). Others may have had extreme biological and temperamental emotional vulnerability from birth, such that even a healthy family environment could maintain their emotional dysregulation and lead to the development of the disorder. Consistent with the transactional nature of the theory, it is assumed that the family environment is typically not inherently invalidating or unloving, and the pattern of invalidation is not fixed, but instead is a product of historical and ongoing transactions of multiple biological, psychological, and social factors (Fruzzetti et al., 2005). The child and the environment reciprocally influence each other over time and can enter a negative feedback cycle in which both the individual and significant others in the environment become more dysregulated.

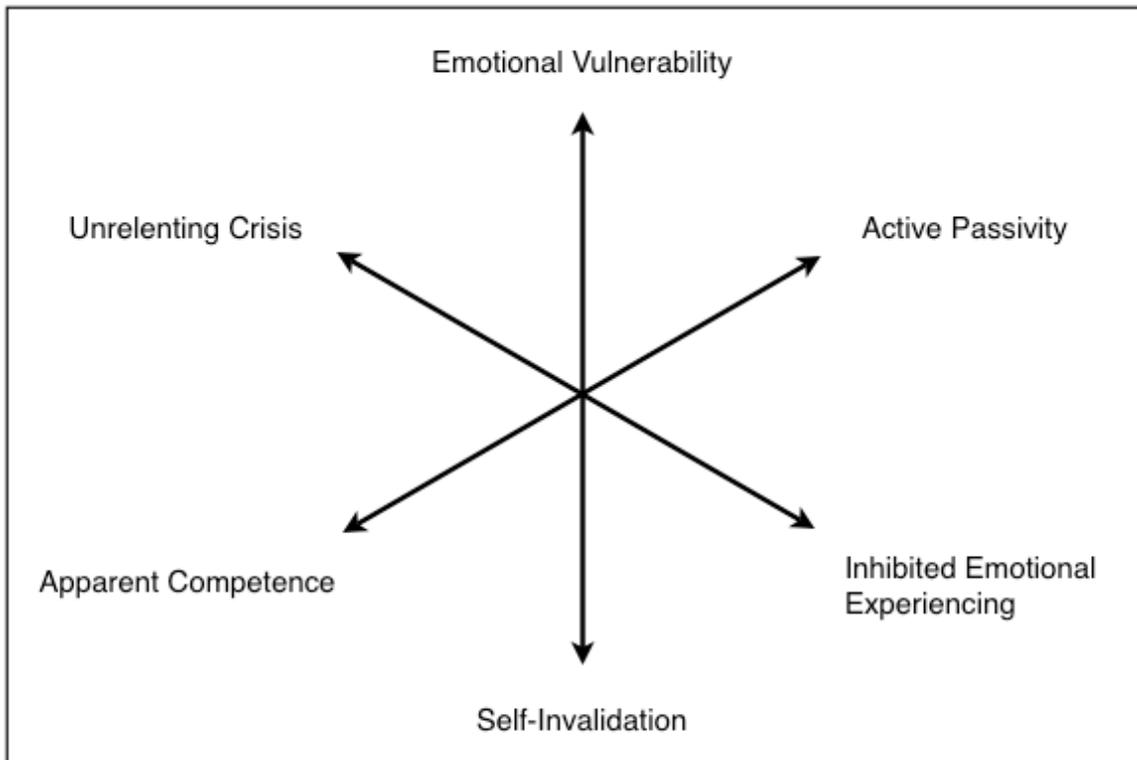
Thus, the invalidating environment is in part created or maintained by the individual, as much as the individual's emotional vulnerability and dysregulation are created and maintained by the environment. As parents' responses to the child become more rigid or rejecting, the child reciprocally becomes more persistently and severely emotionally dysregulated. The parent-child relationship may become characterized by decreased trust and increased conflict by adolescence (Crowell et al., 2009). If this pattern becomes chronic, these responses of the parents and the child become overlearned, traitlike, and resistant to change. Parents are likely to become more invalidating toward a child when the child's temperament places increased demands on the parent, or the parent is unable to respond adequately to the needs of the child. In response to a child with high emotional needs, a parent may become burnt out, have fewer available emotional and parenting resources over time, and may begin to blame or invalidate the child for his or her emotional distress. Fruzzetti et al. (2005) compare this scenario to a baby who has colic and

cannot be adequately soothed with any amount of caring or intervention by the parent. In response, even the best parents can respond with exhaustion, frustration, and feelings of helplessness, and in turn have less patience for the child. In the instance of an emotionally vulnerable child, it is not the fault of the child for having a higher than average level of emotional needs, nor are the parents fully to blame for their responses to the child, given the difficulties inherent in caring for a such a child. The biosocial theory, by emphasizing the transactional nature of the development of BPD attempts to be non-blaming of both the child and his or her caregivers, and instead focus on ways to intervene in the feedback cycle that perpetuates the pattern of dysregulation and invalidation (Robins & Chapman, 2004).

The biosocial theory also outlines three core “dialectical dilemmas” that are faced by individuals with BPD, each of which is defined by two polarities of dysfunctional behavior. It is hypothesized that an individual with BPD often has difficulty finding a healthy synthesis of these dialectical dilemmas and may instead jump from one extreme to another, leading to an erratic pattern of behavior and emotional experiences. See Figure 1 below for an illustration of the dialectical arms of the biosocial theory.

Emotional vulnerability versus self-invalidating. Emotional vulnerability refers to a neurobiological predisposition of emotional sensitivity, reactivity, and a slow return to emotional baseline following emotional arousal (Linehan, 1993; Rosenthal et al., 2008). In response to chronic invalidation from the environment, the individual may learn to invalidate him or herself and begin to believe that his or her emotional experience and expression are somehow wrong, or that there is something wrong with him or her as a person. Individuals with BPD may distrust their own perceptions and instead scan the environment for information about what to think and feel. Individuals with BPD also tend to invalidate themselves by setting unreasonably high expectations of themselves based on their experiences in an invalidating environment (e.g., “I must never cry”; “I should be performing perfectly in school”), and they punish themselves for failures rather than rewarding and shaping their own behavior.

Figure 1
Linehan's Biosocial Theory



Note. Adapted from Linehan (1993, pp. 67)

Active passivity versus apparent competence. This dialectic relates to the way individuals with BPD interact with others at times when they need help. Active passivity refers to a tendency of individuals with BPD to stimulate others to solve their problems for them by acting passive or helpless (Dimeff & Linehan, 2001). Active passivity is an attempt on the part of the client to solve problems in their lives, but they do so by trying to get others to take responsibility for addressing the problems or to soothe and comfort them. Apparent competence, on the other end of this dialectic, is the tendency to appear competent and able to cope at times, and then to unexpectedly fall apart because the perceived competencies do not actually exist or cannot be accessed in different settings and mood states. For example, a client may be able to exhibit a

specific behavioral skill (e.g., ability to ask assertively for help) at work but not at home with his or her significant other despite the therapist assuming that the client had the skills necessary in both situations. Clients may often be unaware that they are in a state of apparent competence until they find themselves in situations that they do not know how to manage. The synthesis of this dialectic is improving the client's ability to ask assertively and appropriately for help when needed, and to recognize when one actually does have the capability to use skillful behaviors to help oneself (Linehan, 1993).

Inhibited emotions versus unrelenting crises. “Inhibited emotions” refers to the tendency of individuals with BPD to try to avoid or inhibit the experience of painful emotional responses. Because individuals with BPD tend to experience their emotions as very strong and unpredictable, they may distrust their ability to regulate their own emotions and become afraid of allowing themselves to experience painful emotions such as sadness, hurt, and grief. Instead, individuals with BPD engage in avoidance behaviors such as substance use or self-harm in order to shut down, numb their emotions or otherwise escape their negative emotional responses (Crowell et al., 2009).

Unrelenting crises, at the other end of this dialectic, refers to a chronic series of urgent problems or “emergencies” created in the client's life by impulsive actions and poor problem-solving. Because crises arise and escalate very quickly in the lives of individuals with BPD, both the client and the therapist may feel urgent pressure to resolve current crises to prevent situations from becoming worse, only to find that there is a new crisis to deal with in the next session. This pattern makes focused treatment planning extraordinarily difficult. Unrelenting crises may arise from a client's inability to tolerate and reduce short-term stress from life problems without engaging in escape or dysfunctional behaviors that make the situation worse and prevent adaptive problem-solving. Linehan (1993, pp. 87) compared conducting therapy with a client in a state of unrelenting crises to “trying to teach an individual how to build a house that will not fall down in a tornado, just as a tornado hits.”

For each of these dialectical dilemmas, the goal of treatment is to provide the client with the skills and emotional capacities necessary to reach a healthy synthesis at the balance point of each of the dialectical arms. Linehan (1993) hypothesizes that individuals with BPD have typically had a lifetime of experience with extreme emotional and behavioral responses, and have found themselves perpetually vacillating from one polarity to another without finding a synthesis. This would understandably be exhausting for the clients and for the important people in their lives. The skills units taught in DBT group skills training are specifically designed to address these core dialectical dilemmas by providing the necessary skills to attain a behavioral and emotional synthesis.

Structure of Dialectical Behavior Therapy

BPD is a complex condition with symptoms in multiple domains of functioning, including patterns of dysregulation in cognitive processes, emotions, behavior, interpersonal relationships, and the development of a sense of self. Due to this complexity, DBT is structured as a long-term multi-stage treatment. Most of the research on the efficacy of DBT has focused on Stage I of the treatment, as this is the stage in which life-threatening and impulsive behaviors are primarily targeted. Stage I of DBT has also been the most clearly defined and manualized of the five stages, while the others are less structured and more flexible in implementation. The stages of DBT treatment are described below.

Pretreatment stage: Orientation and commitment. After intake into a DBT program, a client enters a pretreatment phase during which the therapist and client focus on building a working relationship and orienting the client to the rules, theory, structure, and expectations of the treatment (Koerner & Linehan, 1997). Also, at this time the client must commit to participating in all aspects of Stage I treatment, and agree to target the reduction of suicidality and self-harm behaviors as primary goals of their treatment. The pretreatment phase is intended to last two months or less; however, it may be extended for a variety of reasons (e.g., client is reluctant to agree to targeting self-harm in treatment). During pretreatment, the therapist and client may also create a daily diary card for the client to track therapy-relevant targets such as daily level of

suicidal ideation, urges to engage in self-harm, and the number of times the client actually engaged in self-harm (Linehan, 1993).

Stage I: Attaining basic capacities. The first stage of DBT is the most intensive of the stages, and is aimed at reduction of impulsivity and behaviors that are potentially destructive, dangerous, or life-threatening, including intentional self-harm, suicide-related behaviors, and any other behaviors that may risk the client's life, health, and physical well-being. Stage I DBT serves four primary functions in relation to these goals: developing new skillful behaviors, decreasing motivational obstacles to engaging in new behaviors, generalizing skills to necessary contexts in the client's life, and keeping the therapist sufficiently skilled and motivated to help the client work toward his or her goals (Robins & Chapman, 2004).

Stage I DBT treatment includes participation in multiple modalities of concurrent treatment: one hour per week of individual psychotherapy, a weekly group skills training session, between-session telephone contact with the individual therapist for crisis management and skills coaching on an as-needed basis, weekly consultation team meetings that are attended by the therapists and other treatment providers to maintain motivation and adherence to the treatment frame, and coordination with ancillary treatments such as psychopharmacology, inpatient and day hospitalizations, and other forms of treatment such as couples therapy, support group meetings, or participation in 12-step programs. In DBT, the individual therapist is considered to be the head of the treatment team for a client, and is responsible for coordinating all other facets of the client's care. The components of Stage I DBT are described in more detail below.

Individual psychotherapy. In weekly individual therapy sessions, the therapist reinforces the client's acquisition and practice of new skills, helps to identify and troubleshoot factors that interfere with a client practicing new, skillful behaviors, and coaches the client on applying the skills to problems in his or her life as they arise (Ben-Porath, 2004b). Within an individual therapy session, DBT theory dictates a hierarchy of behavioral targets to be addressed by the client and therapist (Linehan, 1993). The highest priority is always given to suicidal and self-harm related behaviors. The second priority is given to behaviors of either the therapist or the

client that may threaten the therapeutic relationship or the capacity to make progress in therapy (therapy interfering behaviors). The third level of therapy targets include any problems that affect the client's quality of life, such as any behaviors that generate crises in the client's life. Fourth, the acquisition and practice of new skills is emphasized.

It is assumed that in addition to skills deficits, individuals with BPD also experience motivational deficits because their engagement in new behaviors is blocked by overlearned emotional responses, distorted cognitions, or environmental contingencies that do not reinforce more functional behaviors (Linehan, Kanter & Comtois, 1999). The therapist's goal is to create contingencies for the client such that progress in treatment is reinforced and not punished, and maladaptive behaviors are not accidentally reinforced by the therapist or therapy situation. Also, the therapist strives to identify and reduce factors that impede clinical progress. At times, this involves strategies to intervene in a client's social environment. For example, family sessions may be scheduled in order to help the client develop a home environment that also reinforces his or her new skillful behaviors, and to minimize factors that maintain unhelpful behavioral patterns (Linehan, Kanter & Comtois, 1999). The individual therapist strives to balance acceptance strategies and change strategies in each interaction with the client in order to increase a client's motivation to facilitate change. Also, DBT therapists use a variety of strategies to increase clients' commitment and motivation in session, such as devil's advocate and foot-in-the-door techniques (Linehan, 1993).

Group skills training. DBT skills training groups meet weekly and are structured similarly to a psychoeducational seminar rather than a traditional supportive therapy group. Group meetings are typically led by two co-therapists who collaborate in teaching skills and facilitating the participation of the clients. The first half of the skills group meeting is dedicated to reviewing and providing feedback on clients' homework from the previous week, and the second half is devoted to the teaching of a new skills lesson. Linehan reconfigured the diagnostic criteria from DSM-IV-TR (APA, 2000) into groupings based upon broad domains of dysregulation common in the lives of individuals with BPD. According to this classification,

dysregulation can occur in emotions, behaviors, cognitive processing, interpersonal interactions, and development of a sense of self. The skills taught in DBT were designed to reflect and remediate the key areas of deficit that arise from clients' predisposition for emotional vulnerability and history of invalidation.

The DBT skills are divided into four units: Core Mindfulness, Distress Tolerance, Emotion Regulation, and Interpersonal Effectiveness skills (Linehan, 1993). The core mindfulness unit includes skills for consciously focusing one's attention and awareness, and participating openly in one's moment-to-moment experience. Distress tolerance skills increase the individual's ability to experience urges or painful emotions without engaging in problematic behaviors that make the situation worse in the long-term. Emotion regulation skills focus on increasing the individual's ability to notice, experience, label, and modulate their emotions. The interpersonal effectiveness unit teaches skills for improving interpersonal relationships and managing difficult interactions, such as learning to ask assertively for help or say "no" to another person when needed. The skills units are cycled so that the Core Mindfulness skills are taught in intervals between all other units (e.g., Core Mindfulness - Distress Tolerance - Core Mindfulness - Emotion Regulation, and so on). One complete cycle through all skills modules takes approximately six months, and clients commit to participate in two full cycles, so that they receive each skills lesson at least twice in one year of Stage I DBT.

Telephone coaching. Between-session telephone contact with the individual therapist is provided for all clients in comprehensive DBT. This phone contact is intended to be brief and focused on problem-solving and skills coaching; it is not intended to take the form of a psychotherapy session on the phone. The function of between-session phone contact with the therapist is to increase the generalization of skill use to the client's everyday environment, decrease suicidal and self-harming behaviors, and to reinforce appropriate means of asking for help before a maladaptive behavior occurs. Telephone coaching is intended to reinforce active problem-solving, skill use, and asking assertively for help when needed, while extinguishing passive or dependent behaviors (Ben-Porath, 2004a). Clients are encouraged to call their

therapists for help with using skills *rather than* engaging in harmful behaviors such as cutting or overdosing. In order to prevent a situation in which a client's crisis behavior is reinforced by the attention of his or her therapist on the phone, DBT includes a 24-Hour rule stipulating that if the client engages in self-harm *before* calling his or her therapist for help, the client would not have the privilege of phone contact with the therapist for the next 24 hours following the self-harm action, with the exception of necessary safety planning (e.g., ensuring that the client seeks medical evaluation if necessary; Linehan, 1993).

Ben-Porath (2004a) suggests that the DBT model of intersession telephone contact is successful precisely due to its attention to principles of reinforcement. There is evidence that telephone access to the therapist with no structure or boundaries can be counter-therapeutic through inadvertent reinforcement of maladaptive client behaviors through increased attention during crises. In fact, a study by Evans, Morgan, Hayward, and Gunnel (1999) found that parasuicidal behavior increased by 85% in a group of patients with self-harm behaviors when given "green card treatment" involving free access to an on-call psychiatrist for help with crises. DBT's adaptation of the telephone skills coaching protocol, which attends to principles of learning theory and reinforcement, circumvents the typical problems of unintentional reinforcement of maladaptive behaviors by focusing on skills coaching rather than soothing, validating, or allowing the client to engage in extended story-telling. If a client is making frequent phone calls and not using them effectively (e.g., refusing to try the skills suggested by the therapist; using the phone for other purposes than skills coaching), this is treated as a therapy interfering behavior and is addressed directly in therapy sessions in order to shape the client's behavior or problem-solve ways to make skills coaching more effective.

Consultation team. All individual therapists and skills group leaders in a comprehensive DBT model attend weekly consultation team meetings. These meetings are not intended to be used for staffing of clients or case management activities, but instead are intended to improve therapists' skill and motivation in working with their clients. The consultation team provides support, guidance, and continuing education for therapists and maintains therapists' adherence to

the DBT treatment model (Robins & Koons, 2000). In many cases, the consultation team helps the therapist to maintain a non-pejorative conceptualization of the client and monitor his or her reactions to the client, especially when the therapist is beginning to feel judgmental or burnt out. The consultation team balances validating the therapist and his or her reactions to the client, with problem-solving ways the therapist can intervene more effectively with the client and resolve the problems that are creating or maintaining stress in the working relationship (Ben-Porath, 2004b).

Ancillary treatments. Many clients in DBT programs also receive a variety of other services in the community. In most cases this is encouraged, so long as these services do not interfere with the client's treatment in the DBT program, and the individual therapist is aware of the nature of services the client is receiving. Typical ancillary services for DBT clients could include outpatient psychiatric care, inpatient and partial hospitalization, emergency room care, couples and family therapy, support groups, and 12-step programs. Whenever possible, clients are encouraged to use skills and support from their DBT treatment team to cope with problems on an outpatient basis, and decrease their utilization of inpatient services, as hospitalization disrupts ongoing outpatient therapy and risks reinforcement of dependent or crisis-generating behaviors.

Stage II: reducing posttraumatic stress. Stage II of DBT commences after the client has completed at least one year of Stage I treatment and has made significant progress on the primary targets of Stage I, but still needs additional treatment focused on continued application and generalization of skills. In Stage II treatment, clients have typically ceased all self-harm behaviors and suicidal behaviors, although some low intensity suicidal ideation may persist. For clients who previously engaged in self-harm as a means of coping with or regulating painful emotions, this stage of treatment may involve feeling a great deal of emotional pain in the absence of their former means of escaping or numbing their emotions. It is assumed that clients in this stage of treatment feel that they are in a state of "quiet desperation," as the inner experience of emotional pain remains but the former dysregulated behaviors have subsided (Linehan, 1993). Given the high comorbidity of Posttraumatic Stress Disorder with BPD, and the high proportion of individuals with BPD who have experienced neglect or physical or sexual abuse, a primary

goal of Stage II DBT is to address any post-traumatic stress symptoms a client may have from such trauma experiences earlier in life. For clients who have not experienced overt trauma, this stage of treatment may focus on other forms of past events that are unresolved and still cause disruption in the client's life, such as the death of a loved one or the loss of an important relationship. Stage II treatment may entail increasing acceptance of the facts of the trauma, loss or abuse, and decreasing self-invalidation associated with the event (e.g., feeling responsible for the trauma, feeling ashamed of one's response to the events, or minimizing the severity and impact of the trauma; Robins & Koons, 2000). The goal is to move from "a quiet state of desperation to one of full emotional experiencing" (Linehan, 1993). Stage II DBT may or may not include continued skills group participation. The emphasis at this stage of treatment is on the individual therapy.

Stage III: increasing self-respect and achieving individual goals. Stage III of DBT is intended to address problems in daily living and to assist the client in pursuing goals that are important to him or her, including increased self-respect and connection with others (Koerner & Linehan, 1997). A broad goal is that the client will achieve the capacity to feel ordinary happiness and unhappiness, rather than emotional extremes or numbness.

Stage IV: developing the capacity for joy. Stage IV of DBT is not necessarily indicated for every client. This level of treatment is designed specifically for clients who could likely function without ongoing treatment, but wish to continue their personal and spiritual growth. In this stage, clients who have struggled with chronic feelings of emptiness or numbness work to eliminate these feelings of being incomplete, and develop a capacity for joy and connectedness to a greater whole. Linehan described Stage IV as a time of moving from "a sense of incompleteness towards a life that involves an ongoing capacity for experiences of joy and freedom" (Dimeff & Linehan, 2001). This stage may focus on increasing personal fulfillment or psychological insight (Linehan, Kanter & Comtois, 1999).

The Therapeutic Relationship in DBT

Therapeutic approaches vary in their conceptualizations of the meaning and the role of the therapeutic alliance. Most cognitive-behavioral approaches conceptualize the relationship as a

means to increase client collaboration, attendance, and comfort in session, but do not ascribe to theories that the relationship with the therapist is inherently healing to the client in the absence of therapeutic techniques such as exposure or cognitive modification. While DBT is a cognitive-behavioral treatment, and is firmly rooted in behavioral theory and techniques, it differs in several crucial ways from most other cognitive behavioral treatments. Whereas most manualized CBT treatments are intended to be relatively short-term and symptom focused, DBT is much longer-term and is designed to treat severely and chronically mentally ill individuals who have symptoms across a broad range of domains. Due to the length of the treatment, and the nature of the clinical presentation of BPD, there is an increased need for attention to the therapeutic relationship. Also, because progress is often slow in treatment of BPD, the relationship may be a crucial factor in retaining clients in therapy when the work does not feel inherently reinforcing for the client (Linehan, 1988).

DBT is a manualized approach that is principle-driven, as opposed to a structured treatment protocol that dictates a specific session-by-session progression. Several of the principles of DBT treatment are especially relevant to the therapeutic relationship and the style of interaction between therapist and client. Within DBT, the therapeutic relationship is viewed dialectically as neither a necessary and sufficient agent of change, nor simply a facilitator for the delivery of therapeutic techniques. Instead, the relationship is conceptualized as a transactional process whereby the therapist and client reciprocally influence one another in a way that can be meaningful and promote change in both (Robins & Koons, 2000; Swales & Heard, 2007). Linehan (1988) described the therapeutic relationship in DBT as a “real” relationship that has the capacity to enhance the client’s life independently of the achievement of therapeutic goals. Linehan noted that many clients throughout her years of practice had reported to her that a prior therapist kept them alive, even while simultaneously stating that the therapy itself had not been helpful in achieving any of the primary goals. Linehan interpreted this to mean that some unique factor about the therapeutic relationship served an important protective and relational function in the client’s life beyond their work in session, and this was helpful even in the absence of any

other form of therapeutic progress (Linehan, 1988). The therapeutic alliance in DBT is viewed as an idiographic process that unfolds over time through a series of interactions between the therapist and client and is defined uniquely by each therapist-client dyad. The relationship evolves as natural change occurs in both of their lives and in their interaction. The therapist strives to be honest, genuine, and present in the relationship, and he or she may also grow and be affected by the time spent in sessions with their clients (Swales & Heard, 2007). There is an acknowledgement in DBT that a client's current relational style and interpersonal behaviors are shaped by past attachment and relationship experiences, but this is viewed through the lens of social learning theory and behavioral contingencies rather than transference of previous relationship objects onto the therapist (Swales & Heard, 2007). It is assumed that a client's in-session behaviors toward the therapist may reflect their patterns of behavior in other meaningful relationships, and these are seen as some of the most powerful and direct opportunities to change problematic interpersonal behaviors (Swales & Heard, 2007).

In DBT, consistent with learning theory, it is posited that the therapeutic relationship can also serve as a motivator of client change and be used contingently to reinforce desired client behaviors, reward positive change, or to extinguish maladaptive behaviors. The DBT therapist observes and consciously directs his or her behavior according to reinforcement principles. Increased warmth, closeness, and verbalizations of approval follow desired client behaviors, whereas a therapist may use a style that is still respectful, but cooler or more matter of fact with a client who is engaging in therapy interfering behaviors (Robins & Koons, 2000). In order for the relationship to be used operantly, however, the baseline quality of the relationship must be positive, and connection with the therapist must be highly valued by the client (Robins & Koons, 2000). The therapist must monitor the process of his or her relationship with the client on an ongoing basis to examine how his or her responses to the client in any given moment either promote or inhibit change in the client (Swales & Heard, 2007). It is important for the therapist to adapt the treatment to a client's individual needs and what he or she finds reinforcing, as individuals may differ greatly in their social perceptions and a comment that is perceived as

praise and appreciation by one client may be interpreted as condescending or anxiety-provoking to another (Swales & Heard, 2007).

Acceptance and change. The balance of acceptance and change in treatment is considered to be the primary dialectic of the treatment. Balancing acceptance and change means finding a way to communicate to the client that the therapist fully accepts him or her as he or she is, while also persistently pushing for change (Robins and Koons, 2000). The principle of “phenomenological empathy” stipulates that DBT therapists should whenever possible adopt non-judgmental and empathic conceptualizations of clients and their behaviors (Linehan, 1993). The word “manipulative” is not used within the context of DBT; instead, a therapist strives to understand the reasons for the client’s behavior by examining what is known about the client’s learning history, skills deficits, and current life situations and social contingencies that may be contributing to and reinforcing maladaptive behavior. For example, rather than labeling a suicide threat as manipulative or hostile, the therapist may consider alternative hypotheses such as the client lacking the skill to ask more appropriately for needed help. Rather than becoming judgmental of the client, therapists are also encouraged to focus on what would be the most effective way they could treat the client in the current moment (Swales & Heard, 2007).

Communications of acceptance are viewed as crucial elements that enable the client to then engage in new behaviors (Swales & Heard, 2007). Change strategies can be difficult for the client and often entail a short-term increase in distress (e.g., in exposure and response prevention), in order to eventually produce long-term benefits. Acceptance strategies on the other hand are often perceived as comforting, rewarding, and relationship enhancing. However, in the absence of change strategies, communications of warmth and caring can lose their impact and prolong a client’s suffering if the problems maintaining the client’s emotional pain are not resolved. Swales and Heard (2007) provide the example that most people want an auto mechanic who will be kind and respectful toward them, but they also want the automotive work to get done well and in the absence of this, any trust or positive feelings one had toward the mechanic would be destroyed. By balancing relationship enhancing behaviors such as expressions of warmth and

acceptance with change-oriented strategies such as skills training, exposure, cognitive modification, and contingency management, it is believed that the effectiveness and client satisfaction with DBT are optimized (Linehan, 1988; Swales & Heard, 2007).

Validation is one of the key acceptance strategies in DBT. Validation refers to therapist behaviors that communicate to the client that his or her emotions, responses, thoughts, and actions make sense and are understandable in their life context (Linehan, 1993). As such, validation functions both as an acceptance strategy and also as an acknowledgement and verification of the client's view of themselves and the world around them. This is particularly important, as clients who have experienced chronic emotional invalidation are likely to have patterns of doubting the veracity of their own points of view, difficulty identifying and labeling their own emotions and experiences, and poorly-defined sense of self (Linehan, 1993). Validation strategies are intended to accurately reflect back to the client the truth and validity of their experience, thus increasing their own ability to trust their perceptions and validate themselves.

Validation is not the same as praise or empathy, or even agreement (Linehan, 1997). For instance, if a client is verbalizing suicidal urges, a therapist would not agree with the client's perspective that he or she needs to die, but instead might choose to validate a related concept, such as expressing understanding and compassion for the pain that leads to the suicidal ideation and expressing a desire to help the client to problem-solve more functional ways to reduce or tolerate this pain. Validation creates a context for change by reducing a client's rigidity, emotional dysregulation, and other factors that impede their ability to try new behavioral responses (Robins & Koons, 2000). At the lowest level, validating behaviors of a therapist can be simply listening, making eye contact, and showing nonverbal signs of interest in the client. Stronger forms of validation include verbalizations that the therapist believes that the client's experience makes sense given his or her learning history or current life situation (Linehan, 1997).

In DBT, the highest form of validation is an interpersonal style of the therapist marked by "radical genuineness." Radical genuineness refers to a style of interaction that treats the client as a person of equal status who is deserving of respect and capable of being effective (Linehan

1997). The therapist responds to the client in a natural and genuine manner rather than adhering strictly to a stereotyped professional role (Robins & Koons, 2000). The therapist avoids treating the client in a way that suggests that the client is fragile or volatile (Swales & Heard, 2007), which communicates to the client that the therapist sees him or her as being able to tolerate being spoken to as the therapist would speak to any other person who was in distress, rather than as a “mental patient” or someone of lower status. A therapist may also choose to engage in strategic self-disclosure with the client, by sharing with the client how his or her behaviors make the therapist feel, if it is believed that this information would be helpful to the client or motivate change. For example, in response to a pattern of therapy interfering behavior, the therapist might say “when you repeatedly come late to session, I feel my motivation to work decrease. I don’t want that to happen” (Robins & Koons, 2000). This can serve to model assertive and open communication, and also provide an opportunity to directly address problematic patterns occurring in the therapy.

Therapist style in DBT. The therapeutic style in DBT is marked by “movement, speed, and flow.” This refers to the need for a therapist to be actively engaged in the interaction with the client and be able to quickly adjust his or her style in response to changes in the client. A therapist may need to rapidly alternate between different approaches in order to promote more balanced responses in the client. For example, DBT prescribes two main communication styles that are utilized by therapists: reciprocal and irreverent. Reciprocal communication is a style that is responsive, genuine, warm, and engaged, and is likely to be perceived as accepting and validating by the client. Irreverent communication, on the other hand, is a style used to change the tone or perspective of the moment through the use of humor, directness, or an abrupt, off-beat comment that leads the client to back up and reorient. It is intended to shake a client out of an unhelpful line of thinking, feeling, or behaving in session (Robins & Koons, 2000). Irreverence may include exaggeration or irony, but should never be sarcastic or mocking toward the client (Fraser & Solovey, 2007). A therapist may juxtapose both styles within a session in order to achieve the necessary balance of acceptance and change.

DBT therapists are also expected to balance several other styles and approaches, as the needs of the moment dictate. Therapists must balance “compassionate flexibility” with “unwavering centeredness” by maintaining necessary limits and adherence to the principles of DBT, but also allowing natural change to occur and avoiding rigidity in their responses to the client (Dimeff & Linehan, 2001; Robins & Koons, 2000). Therapists also strive to balance nurturing behaviors with a style of “benevolent demanding.” This means that a therapist must strike a balance of providing support, assistance, and teaching when it is needed, while not giving unnecessary help that might reinforce passive or dependent behaviors of the client or interfere with his or her practice of skills. This is especially relevant in the context of DBT’s emphasis on “consultation to the patient,” which encourages the therapist to coach the client on solving his or her own problems whenever possible rather than intervening on the client’s behalf, with the therapist only intervening directly when the client actually needs concrete help. Whenever possible, therapists encourage clients to solve their own problems with other treatment providers or other significant others in their lives rather than making phone calls for the client or telling others how to treat the client (Swales & Heard, 2007). For instance, if a client feels hurt by a comment her skills group leader made to her last week, the therapist would coach the client on how to skillfully manage the problem with her group leader rather than agreeing to talk to the leader on the client’s behalf or tell the leader how to treat the client.

Therapy interfering behaviors. Therapy interfering behaviors are a high priority topic in DBT, second only to life-threatening behaviors in their importance in individual therapy sessions. Therapy interfering behaviors are not simply viewed as obstacles to overcome, but instead, they can provide important opportunities to identify and change maladaptive behaviors and thereby increase a client’s quality of life and interpersonal relationships. By addressing therapy interfering behaviors, it is theorized that the client will be more likely to stay in treatment and continue being able to work effectively with the therapist rather than dropping out, burning out, or receiving lower quality treatment because problems between the therapist and client are chronically ignored or avoided.

Therapy interfering behavior does not only refer to problematic behaviors of clients, as therapists can and do engage in a variety of therapy interfering behaviors as well. On a concrete level, therapists' therapy interfering behaviors may include problems such as lateness for sessions, appearing tired or distracted in sessions, failure to return phone calls or frequently taking calls from others during therapy sessions. Each of these behaviors is likely to decrease a client's motivation and positive feelings toward the therapist over time. On a more abstract level, therapists may interfere with the therapy's progress by providing a treatment that is not well-balanced, does not follow treatment guidelines, or is marked by avoidance of necessary strategies. For example, if a therapist begins to back away from sensitive topics after several instances of a client becoming very angry and shouting at him or her in session, the therapist has been reinforced for an avoidant style and is now impeding progress in therapy by missing important opportunities for intervention (Linehan et al., 2007).

DBT therapists are encouraged to continually practice mindfulness and active, honest monitoring of their own internal responses to patients in order to prevent burnout or any reduction in the quality of their therapeutic work. Through mindfulness strategies, therapists increase their self-awareness in session and identify their own behaviors that could detract from the therapy process, including judgments, inaccurate interpretations, lack of focus, and certain emotional responses or ineffective urges (e.g., to criticize the client or to avoid certain topics). Therapists' mindfulness practice in session also increases their awareness of subtle changes in clients' emotions, mood, thinking, and responses to the therapist. Being fully present and alert in session increases effectiveness (Swales & Heard, 2007). Through striving to achieve dialectical balances in their work with clients, therapists are required to examine their own interpersonal style and relational patterns, and to work on any imbalances in their perceptions and interpersonal behaviors in order to enhance their therapeutic effectiveness. This is an example of a way in which the transactional relationship between therapist and client can lead to enhancement of the therapist's life as well as the clients, through the personal growth the therapeutic work encourages in the therapist (Linehan, 1988; Swales & Heard, 2007).

When a therapist recognizes that he or she has been engaging in a therapy interfering behavior, it can be very helpful to the client for him or her to recognize this, apologize for it, and make a commitment to improve the problem. Resolving therapy interfering behaviors in the relationship in an open, direct, and respectful manner can serve as social modeling for assertive communication and conflict resolution in relationships. When a therapist begins to feel reduced motivation to work with a client, he or she may also seek help from the consultation team, and use DBT strategies on him or herself to avoid engaging in detrimental behaviors toward the client such as acting angry, withdrawn, fearful, or blaming toward the client (Swales & Heard, 2007). Consultation team meetings are intended to serve as “therapy for the therapist,” to help the clinicians maintain a nonjudgemental and effective stance in their work with their individual clients and to monitor their own emotional reactions to challenging situations with clients.

When conflicts or therapeutic impasses occur between the therapist and client, it is recommended that they seek a dialectical synthesis of their respective viewpoints that validates both perspectives while also moving the client in the direction of growth and more adaptive behavior if possible (Linehan & Schmidt, 1995). For example, if a client refuses to acknowledge the harm her substance abuse is causing in her life and will not agree to work on reducing her substance use, the therapist may back away temporarily from this particular goal and instead find a related goal that the client will agree to. If the therapist determines through behavioral analysis that the client has been using substances primarily to regulate her anxiety, the therapist and client may be able to agree to target anxiety in their work together and work toward better anxiety management skills. If the therapist were rigid and persisted in confronting the substance abuse despite the client’s unwillingness to accept this goal, the therapist risks the client becoming disengaged in treatment or engaging in new therapy interfering behaviors such as lying about substance abuse to avoid the topic (Swales & Heard, 2007).

Therapeutic limits and boundaries. Whereas some other theoretical orientations, such as psychodynamic therapy emphasize the need for firm boundaries in the treatment of clients with BPD (Gabbard, 1993; Knight, 1953), DBT discourages the use of rigid or arbitrary boundaries.

Instead, each individual therapist is encouraged to notice what his or her personal limits, boundaries, and professional preferences are, and then to communicate these clearly to the client and observe any changes that may occur across time or with different patients. It is assumed that therapists will naturally have different limits from one another, and these will also naturally change with life circumstances across time. For example, one therapist may be willing to accept client phone calls for skills coaching at any hour of the day, while another may inform her clients that she is happy to take calls until a certain hour in the evening, after which they will need to call an emergency service instead (Ben-Porath, 2004a). Also, the therapist who accepts calls at all hours may need to change this policy if his or her life circumstances change, such as after the birth of a new baby.

This variability is accepted in DBT and is viewed as crucial for preventing therapist burnout. A therapist may also respond differently to different clients and have different limits with each based upon the needs of the therapist, needs of the client, and the stage of their work together. For example, a therapist may be more willing to accept a 3 A.M. phone call from a client who will be willing to take the therapist's suggestions and use them constructively, as opposed to a client who repeatedly calls and then refuses to do what the therapist suggests or responds with statements such as "that won't work." It is acceptable for the therapist to have different limits for different clients, or for the same client at different times in their work together. In DBT, limits are conceptualized as a relational, context dependent construct, rather than a set of recommendations for treatment that all therapist and client dyads must adapt to. It is very important for therapists to monitor and respect their personal limits, in order to prevent burnout and improve their ability to continue being available and effective with their clients (Swales & Heard, 2007).

Many individuals with BPD have had multiple attempts at psychotherapy prior to entering a DBT program, and their experiences with prior therapists affect their engagement with their current therapist in a DBT program. On average, individuals with BPD have 6.1 therapists across their lifetime (Perry et al., 1990; Skodol et al., 1983), and it is not uncommon for these individuals to have been "fired" by previous therapists or to have had unsatisfactory prior

experiences with outpatient therapy. A study of therapist and client burnout in DBT suggests that clients can experience stress and burnout in therapy in a similar way to therapists (Linehan, Cochran, Mar, Levensky & Comtois, 2000). Clients can experience the same domains of burnout, including emotional exhaustion, depersonalization of the therapist (seeing the therapist as an impersonal object rather than a human being with feelings), and reduced feeling of personal accomplishment. The best predictor of a therapist's level of burnout after several months of work with a client was the client's level of burnout in therapy prior to starting their work with the therapist (i.e., burnout from previous attempts at therapy; Linehan et al., 2000).

Efficacy of Dialectical Behavior Therapy

Since the publication of the DBT treatment manual (Linehan, 1993) and the first peer-reviewed articles on DBT (Linehan, 1987a; Linehan, 1987b; Linehan et al., 1991), many empirical studies of the treatment's efficacy have been published, including a broad range of research designs from rigorous randomized controlled clinical trials (RCTs) to quasi-experimental and case study designs. In addition to studies of the efficacy of standard, manualized DBT, many studies have evaluated the effectiveness of extensions of DBT to other clinical populations (e.g., depressed older adults, self-harming adolescents, women with binge eating disorder, individuals with opiate addictions) and other settings (e.g., inpatient units, psychiatric emergency rooms, forensic settings). The following review of the literature on the efficacy of DBT will focus primarily on the RCTs of standard outpatient DBT, as this has been the most compelling evidence for the efficacy of the treatment and the basis for its establishment as an empirically supported treatment. Limitations of the existing research base and future directions will also be discussed.

Randomized controlled trials by Linehan's research team. The first randomized controlled trial of DBT (Linehan, Armstrong, Suarez, Allmon & Heard, 1991) compared standard outpatient DBT to a treatment as usual (TAU) control condition that was representative of the type and amount of mental health care that individuals with borderline personality disorder typically receive in the community. The sample included 44 women, aged 18-45, who met diagnostic criteria for borderline personality disorder and had a history of at least two incidents of

intentional self-harm in the past five years. Exclusion criteria for participation in the study were comorbid diagnoses of bipolar disorder, substance dependence, mental retardation, or schizophrenia. The women participating in this study were randomly assigned to one year of DBT treatment or one year of treatment in the community with the therapist of the client's choice. All clients in the study were assessed at intake, month 4, month 8, and month 12 of treatment on the frequency of hospitalizations and self-harming behaviors, as well as self-reported depression, hopelessness, reasons for living, and suicidal ideation.

The results indicated that DBT was superior to TAU in a number of ways. Across the year of treatment, DBT was superior to TAU for treating parasuicidal behavior. Clients in the DBT condition engaged in fewer acts of intentional self-harm, with a median of 1.5 per year for the DBT clients and 9 per year for TAU, and acts of self-harm were less medically severe in the DBT group. Clients in the DBT condition also had fewer psychiatric inpatient admissions during the treatment year, and spent overall fewer days in psychiatric inpatient units. DBT was also superior to TAU in retention of clients in treatment. In the DBT condition, 83.3% of the clients remained in treatment with the same therapist for the full year, while only 42% of the clients in the TAU condition did so. Both DBT and TAU were similarly effective in decreasing self-reported depression, hopelessness, and suicidality, and increasing reasons for living across the treatment year. Overall, this first randomized controlled study of DBT's efficacy suggested that the treatment is promising and may be a stronger approach than the typical treatment received by individuals with BPD in the community, especially in regard to reduction of life-threatening behaviors and hospital utilization.

Following the publication of this first clinical trial, a related study investigated clients' social adaptation and overall functioning after one year of either DBT or treatment as usual (Linehan, Tutek, Heard & Armstrong, 1994). This study was also conducted by Linehan's treatment team and utilized the second of two cohorts of participants from the 1991 randomized controlled trial described above. The sample included 26 who were randomly assigned to DBT or TAU. Participants were assessed at pretreatment, month four, month eight, and month twelve on

social adaptation variables of trait anger, self-reported social adjustment, interviewer-rated social adjustment, global life satisfaction, and scores on the Global Assessment Scale.

The results indicated that clients who received DBT self-reported less anger and higher global adjustment than did clients in the TAU condition. Independent interviewers also rated the DBT clients higher than clients in the TAU condition on global social adjustment at the end of one year of treatment. Overall, this study provides additional support for the superiority of DBT over treatment as usual in the community for women with borderline personality disorder. However, Linehan et al. (1994) acknowledge that while the DBT condition led to statistically significant improvement in symptoms and functioning, the clients in this sample still had moderately severe symptoms in a number of domains at the time of discharge from both of the treatment conditions. For example, at the end of one year of treatment, the majority of clients in the DBT condition were rated as having “moderate symptoms” or “generally functioning with some difficulty” on the interviewer-rated Global Assessment Scale. Patients in both groups had significantly higher anger and poorer social adjustment than the norm for the general population, or even a typical outpatient psychiatric sample. After one year of treatment in DBT, most of the clients in this trial would likely need to continue with some form of treatment. This indicates that while DBT appears to be superior to the typical treatment available to women with BPD in the community, it may be most efficacious for reduction of self-harm and inpatient psychiatric days, while other psychiatric symptoms have poorer treatment response.

In a naturalistic follow-up study (Linehan, Heard & Armstrong, 1993) of the clients from these first two randomized controlled trials, participants were re-assessed at six and twelve months post-treatment in order to investigate the longevity of treatment gains for DBT versus the TAU condition. Of the 44 women in the original year-long treatment trial, 39 were maintained in the post-treatment follow-up analyses. At the end of the twelve month treatment period in the original clinical trial, all clients in the DBT condition were required to take a two month “vacation” from treatment, after which they were permitted to continue treatment with their individual therapist from the DBT team if they wished. Clients in the TAU condition were not

required to take a break, and were permitted to continue uninterrupted treatment with their therapists if they chose to do so.

At six months post-treatment, the clients from the DBT condition had engaged in significantly fewer intentional self-harm acts and had fewer medically-treated self-harm episodes compared to clients from the TAU condition. However, at the one-year post-treatment timepoint, the DBT and TAU participants no longer differed on any of the self-harm measures. The analyses indicate that the clients in the TAU condition gradually decreased their engagement in self-harm across the post-treatment year, until eventually they were not significantly different from the sustained lower level of self-harm in the DBT condition. Thus, the low incidence of self-harm in the DBT condition was maintained stably across the post-treatment year, and the TAU group gradually improved across the year to eventually reach a comparable level to the DBT group. The clients in the DBT group reported fewer psychiatric inpatient days than did the TAU group in the second six months (but not the first six months) after treatment termination. The DBT group also exhibited superiority over TAU in several social adjustment scales during the post-treatment year. At 6 months post-treatment, participants in the DBT condition had significantly lower trait anger and better self-reported social adjustment. At 12 months post-treatment, participants in the DBT group also had higher overall interviewer-rated social adjustment compared to participants in the TAU condition. In summary, the results of this naturalistic follow-up study indicate that the majority of treatment gains from one year of DBT are maintained over the following year. At six and twelve months following the end of the experimental treatment year, clients in the DBT condition had decompensated somewhat, but their treatment results were still equal or superior to the TAU condition on all experimental variables (Linehan, Heard & Armstrong, 1993).

Replications and extensions of early RCTs. The first randomized clinical trial of DBT outside of its site of development was conducted in a Veterans' Administration treatment setting, where 20 clients were randomly assigned to either six months of comprehensive standard DBT or six months of the typical treatment provided in the VA system (Koons et al., 2001). All participants in this study were women, aged 21 to 46, who met diagnostic criteria for borderline

personality disorder based on a structured clinical interview. Unlike the sample used for Linehan's studies described above, the participants in this study were not required to have a history of self-harm, and thus had a lower level of severity. Exclusion criteria for participation in this trial were comorbid diagnoses of schizophrenia, bipolar disorder, substance dependence, or antisocial personality disorder. In the DBT treatment condition, all sessions were coded for adherence to the DBT treatment frame using the DBT Expert Rating Scale (Linehan, Wagner & Tutek, 1990), and were found to be sufficiently adherent. The control condition of treatment as usual in the VA was conducted by therapists of similar credentials and experience levels to those in the DBT condition. The treatment as usual condition was heterogeneous, as therapists in this condition were instructed to choose the therapeutic approach they typically would use with this client population. The therapists generally described their approaches as cognitive-behavioral, psychodynamic, or eclectic.

Outcome variables included self-harm behaviors, suicidal ideation, hopelessness, depression, anxiety, anger expression, and dissociative symptoms. Participants' individual therapists were also interviewed for their perceptions of the clients' progress. Compared to TAU, women in the DBT condition had a greater reduction in suicidal ideation, depression, hopelessness, and anger after six months of treatment. There was no difference between treatment groups for frequency of hospitalization; however, unlike participants in the TAU condition, participants in the DBT group showed a significant reduction in the number of self-harm acts from pretreatment to treatment termination. In contrast to the results of previous studies (e.g., Linehan et al., 1991) this randomized controlled trial indicated a higher rate of dropout for the DBT condition compared to treatment as usual. This study supported the findings of Linehan and her colleagues that DBT is superior to treatment as usual in reducing symptom severity and engagement in high-risk behaviors. However, the Koons et al. (2001) trial lasted six months, which is only half the length of the standard DBT protocol, and no data were provided on the sustainability of treatment gains post-treatment.

Another RCT comparing DBT to a TAU condition was conducted in the Netherlands (Verheul et al., 2003). Like all previous RCTs for DBT, only women were eligible to participate in this study. Women with BPD ($n = 58$) were randomized into twelve months of either DBT or TAU in the community, and the groups were matched by age and comorbid substance abuse. Exclusion criteria were diagnoses of bipolar disorder, chronic psychotic disorder, and severe cognitive impairments. Unlike the Linehan et al. (1991, 1993, 1994) RCTs, there was no requirement that women have recent parasuicidal behavior in order to participate in the study. The TAU condition consisted of case management in the community, typically amounting to approximately two sessions per month with a psychologist, social worker, or psychiatrist, whereas the DBT condition entailed multiple treatment contacts per week. In the DBT condition, therapy sessions were rated for therapists' adherence to the DBT model.

The DBT condition had better patient retention (63%) compared to the TAU condition (23%). There was a group by time interaction for self-harming behaviors, in which self-harm rates gradually decreased across the year in the DBT condition, and gradually increased with time in the TAU condition. Clients in DBT also showed greater reduction in impulsive behaviors with time in treatment compared to TAU. There was no significant difference between treatment conditions in the incidence of suicide attempts. The two treatment conditions also had similar client ratings of therapeutic alliance on the Working Alliance Inventory, despite the much higher rate of dropout in the TAU condition. DBT was found to be especially superior to TAU for treatment of the most severe clients, and the difference in the effects of the two conditions was smaller (but still significant) for the less severe cases. The results of the Verheul et al. (2003) RCT suggest that DBT may be the best choice treatment for the most severe and chronically suicidal patients engaging in high-risk behaviors, but the treatment may not give much incremental gain over treatment as usual in the community for less severe patients or for treatment goals not related to reduction in impulsive and high-risk behaviors (e.g., depression, hopelessness). Also, given the similarly high ratings of therapeutic alliance in the two treatment

conditions, the authors suggest that the superior effectiveness of DBT may have more to do with its key behavioral strategies than with the quality of the alliance.

A follow-up to the Verheul et al. (2003) RCT examined whether treatment gains were sustained across six months post-treatment in the same sample of clients (van den Bosch et al., 2005). Six months after the completion of the original one-year treatment protocol, clients were assessed on self-harm, impulsive behavior, substance abuse, and BPD symptoms. During the six months post-treatment, clients in the TAU condition were allowed to continue uninterrupted treatment, but clients in the DBT condition were required to take a two month break from treatment before resuming treatment if desired. Results indicated that at six months post-treatment, the DBT condition was still superior to TAU in frequencies of self-harm, substance abuse, and impulsive behaviors. The superiority of the DBT condition became smaller but remained significant in post-treatment, as some of the positive effects of DBT faded with time and clients in the TAU condition showed slight improvement during post-treatment. The patients in the DBT condition showed no improvement in the six months following treatment, and it was predicted that the long-term benefits of DBT treatment would continue to diminish with time outside of treatment. This suggests that once impulsive and self-harming behaviors are controlled during the first year of DBT treatment, some form of stage-II treatment or booster sessions are needed to deepen the treatment results and increase the maintenance of gains across time (van den Bosch, et al., 2005).

Studies utilizing stronger comparison conditions. One of the strongest criticisms of the early randomized controlled trials of DBT efficacy was the weakness of the control conditions used in these studies (Scheel, 2000; Westen, 2000). The use of TAU as a comparison treatment is problematic for many reasons. The TAU conditions tended to be poorly defined and heterogeneous. Clients in the TAU conditions also received significantly fewer hours of treatment during the same period of treatment (e.g., twice monthly case management in the Verheul et al., 2003 study, as compared to several hours each week of therapeutic contact in the DBT condition). Also, it has been suggested that therapists in the DBT conditions have obtained better results due

to a higher level of training, supervision, adherence monitoring, and overall higher excitement and allegiance to their treatment modality (Westen, 2000). Critics of the burgeoning DBT research base (e.g., Scheel, 2000) called for studies using stronger, better-defined control conditions in order to minimize these potential methodological problems. In response to these critiques of the DBT efficacy studies, several studies were implemented using stronger control conditions.

For example, McMain et al. (2009) compared DBT to “general psychiatric management,” a manualized approach created for the purpose of their study that was derived from the APA (2001) guidelines for treatment of BPD: a combination of psychodynamically informed treatment and symptom-targeted medication management. Weekly treatment hours were still different for the two conditions: one hour weekly of individual therapy in the general psychiatric management condition compared to DBT’s one hour of individual therapy plus a weekly skills group and access to phone coaching, but both therapy conditions provided similar amounts of group supervision for study therapists. There were no between-group differences in the level of training or experience of the study therapists. While this was still an imperfect control condition, it was superior to previous heterogeneous and non-specific TAU conditions.

Participants in the McMain et al. (2009) study were randomized into either DBT or general psychiatric management for one year of treatment. Unlike previous RCTs, men were eligible to participate in this study; however, the sample was still 90% female which did not provide the statistical power necessary to examine gender differences. For inclusion in this study, participants needed to meet DSM-IV criteria for BPD and have at least two instances of suicidal or non-suicidal self-injury in the past five years, one of which must have occurred within three months of enrollment in the study. Exclusion criteria were comorbid diagnoses of psychotic disorders, bipolar I disorder, dementia, mental retardation, or current substance dependence. At time of randomization, there were no between-group differences in demographics, diagnosis, or severity of suicidal or self-harming behaviors. Results indicated that both DBT and general psychiatric management were effective in decreasing the frequency of suicidal and self-harming

behaviors, and decreasing the medical severity of self-harm. Both treatment conditions also led to significant improvement in borderline symptoms, depression, interpersonal functioning, overall level of psychiatric distress, anger, and number of emergency room visits. There were no significant differences between the DBT condition and general psychiatric management on any outcome variable, indicating that both treatment protocols could be good options for treating clients with symptoms of BPD.

Another study addressing the problem of inequivalent control conditions in the DBT efficacy research was a two-year RCT comparing standard DBT to a modified TAU condition using community therapists who had been recognized by their peers as being “experts,” or exceptionally proficient in their preferred mode of therapy (Linehan et al., 2006). By using therapists who were experts in their chosen modality of therapy for the “treatment as usual by experts” (TAU-E) condition, it was hoped that the differences in therapist experience, knowledge, and motivation for practicing their given mode of treatment would be minimized. Therapists in the TAU-E condition were nominated by community mental health leaders (e.g., heads of inpatient units, clinical directors of mental health agencies) as being experts at treating difficult clients. Nominees were asked to rate their theoretical orientation on a scale from “behavior therapist” to “very non-behavioral.” The therapists chosen for this study predominantly described themselves as “eclectic but non-behavioral” or “mostly psychodynamic.” Participants in this trial were required to meet diagnostic criteria for BPD, and have at least two suicide attempts or self-injuries in the past five years, with at least one occurring in the two months prior to study enrollment. All participants were female. Exclusion criteria were comorbid schizophrenia, schizoaffective disorder, bipolar disorder, psychotic disorder, seizure disorder, or mental retardation.

Results indicated that clients in the DBT group had half the rate of suicide attempts of those in the TAU-E condition (23% versus 46%). Both treatments were significantly and equally effective in reducing the frequency of self-harm behaviors, but among clients who had any suicide attempt or self-injury during the year of treatment, the patients in the DBT group had

lower severity and medical risk. Clients in the DBT condition had fewer emergency room visits and psychiatric hospitalizations during the year of treatment. Clients in both conditions self-reported significantly increased reasons for living and decreased suicidal ideation and depression. Finally, the DBT condition had better client retention, with clients in the TAU-E condition being more likely request a new therapist or drop out of the study entirely. In summary, both conditions were effective in improving many of the outcome variables; however, DBT showed superiority in reducing medical risk of self-harm and frequency of suicidal/self-harming behaviors, and retaining clients in treatment across one year.

Another study comparing DBT to a strong comparison treatment was a one-year randomized controlled trial comparing DBT to two other treatment conditions: general, psychodynamically-oriented supportive therapy, and Transference Focused Psychotherapy (TFP; Clarkin et al., 2007). TFP is a manualized psychodynamic approach that is based on Kernberg's (1976) theory of object-relations in borderline pathology. TFP entails twice-weekly individual therapy sessions focused upon the development of more integrated representations of self and others (i.e., as opposed to "splitting"), and development of more mature defenses, primarily through exploration of the transference relationship with the therapist. In the randomized controlled trial of DBT, TFP and supportive therapy, clients were randomly assigned to one of the three treatment conditions for one year. Within each treatment condition, extensive supervision and review of therapy tapes was provided by expert clinicians to ensure adherence and sufficient delivery of the specified treatment modality. Results indicated that DBT and TFP were equivalently effective for reducing suicidality, depression, and anxiety, as well as increasing clients' global functioning and social adjustment. The only significant difference cited between DBT and TFP was that clients in the TFP condition had a higher degree of reduction in anger after one year of treatment (Clarkin et al., 2007).

Further evidence and extensions of DBT. Another common critique of the DBT efficacy research is that there is a need for dismantling studies that would help to identify which particular parts of the complex treatment protocol are the "active ingredients" that are necessary

for successful treatment (Bornovalova & Daughters, 2007 ; Lynch et al., 2006; Scheel, 2000). To date, there have been a few preliminary dismantling studies, but data are still limited. For example, several studies have examined the unique contribution of the DBT skills group to treatment outcomes. A study examining the relationship between DBT skills training and treatment outcome found that client's report of skills utilization was associated with a significant reduction in total BPD symptoms over time (Stepp, Epler, Jahng & Trull, 2008). Clients reported using an average of 7.1 DBT skills per week outside of therapy, and the frequency of self-reported skills utilization increased linearly across time in treatment. Linehan, Heard and Armstrong (1993) also conducted a pilot study of the effects of adding DBT group skills training onto non-DBT individual psychotherapy received in the community, with the hypothesis that adding DBT skills training to treatment as usual in the community would provide additional benefits for clients with BPD. A sample of 19 clients receiving non-DBT outpatient therapy in the community were randomized into either a skills training condition in which clients' ongoing therapy was supplemented with a weekly DBT skills training group, or a control condition in which client's therapy continued with no modification (no group treatment or skills coaching). The results of this study indicated that adding a weekly DBT skills group provided little benefit to non-DBT individual therapy. Clients randomized to the DBT skills condition reported enjoying the skills groups and finding them helpful, but there were no significant between-groups differences at post-treatment on any therapy outcome variable (Linehan et al., 1993).

DBT skills training groups have also been tested as a standalone treatment, and compared to a standard psychodynamically-oriented therapy group for treatment of BPD (Soler et al., 2009). Clients were randomized into either a DBT skills group or a psychodynamic group therapy condition, and clients in each condition received 13 group sessions of two hours each. None of the clients in this study received individual therapy during the experimental period. The DBT skills training group had a significantly lower dropout rate, and better reduction in depression, anxiety, borderline symptoms, and general psychiatric symptoms. This study indicated that even in the absence of any form of individual therapy, a DBT skills training group resulted in

significant improvement for clients with BPD, although these results are unlikely to be equal to those of a comprehensive treatment including individual therapy (Soler et al., 2009).

DBT was originally developed as an outpatient treatment for chronically suicidal and self-harming individuals with Borderline Personality Disorder, and the early RCTs predominantly focused on the efficacy of the manualized DBT treatment protocol for this specific client population. However, as DBT was disseminated and became popular in a variety of clinical settings, efforts were made to modify DBT for treatment of other clinical populations or for different treatment settings. For example, research has supported the effectiveness of modified DBT protocols for the treatment of several psychiatric conditions: binge eating disorder (Telch, Agras & Linehan, 2001), depression in older adults (Lynch et al., 2003), self-harm and emotional dysregulation in adolescents (Katz et al., 2004; Rathus & Miller, 2002; Walsh, 2004; Woodberry & Popenoe, 2008), comorbid BPD and posttraumatic stress disorder (Harned & Linehan, 2008), and substance use disorders (methamphetamine: Dimeff et al., 2000; opiate dependence: Linehan et al., 2002; polysubstance abuse: Linehan et al., 1999). DBT has also been modified and empirically evaluated for application in a variety of treatment settings: juvenile forensic units and general prison settings (Low et al., 2001; McCann & Ball, 2000; McCann, Invanoff, Schmidt & Beach, 2007; Trupin et al., 2002), psychiatric emergency room and crisis intervention settings (McQuillan et al., 2005; Sneed, Balestri & Belfi, 2003), and psychiatric inpatient and partial hospitalization units (Barley et al., 1993; Bohus et al., 2000; Bohus et al., 2004; Kroger et al., 2004; Simpson et al., 1998; Springer, Lohr, Buchtel & Silk, 1996).

Summary and Future Directions for DBT Research

Across studies, several findings have been fairly consistent. DBT has been found to be equal or superior to all comparison treatments for the reduction of the frequency and severity of self-harming behaviors, reduction in suicidal ideation and behaviors, and reduction in psychiatric hospital utilization. Many studies also suggest that DBT has better retention rates across a year of treatment compared to other treatments. It has been suggested that DBT's superior client retention is attributable to the treatment's emphasis on validation of clients, as well as a high degree of

therapist availability and frequency of contact (Bornovalova & Daughters, 2007). DBT has also been found to be a relatively cost-effective treatment (Linehan, Kanter & Comtois, 1999). DBT has higher up-front costs for outpatient services, given the combination of weekly therapy and group therapy, but through a reduction in clients' utilization of crisis interventions such as emergency room visits, inpatient stays, and partial hospitalization, DBT has been found to lead to an annual savings of over \$9,000 compared to treatment as usual in the community (Linehan, Kanter & Comtois, 1999).

As the previous review suggests, within a very short time after the publication of the first randomized controlled trials of DBT's efficacy (Linehan et al., 1991; Linehan et al., 1994) and the publication of the DBT treatment and skills training manuals (Linehan, 1993), many clinicians worldwide began to enthusiastically adopt and implement DBT in their practices. DBT grew very quickly due to the strong need for effective and well-defined treatments for BPD. It was rapidly adopted and adapted to a wide range of clinical applications, across treatment settings and clinical populations. Some theorists observed this fast dissemination of DBT and cautioned that its popularity may have grown faster than its research base. For example, within eight years of DBT's introduction, Westen (2000) remarked that there was a 20:1 ratio of theoretical papers to empirical studies of DBT in peer-reviewed journals. Similarly, Scheel (2000) offered an early critique of the burgeoning DBT research base, suggesting that several methodological problems in the efficacy research made it premature as of 2000 to conclude that DBT was superior to other treatments for BPD or should be considered a "treatment of choice." Since then, the research on DBT has continued to grow and strengthen claims that DBT is an efficacious treatment. However, some methodological limitations in the efficacy research continue to limit the conclusions that can be made about outcomes in DBT.

The randomized controlled trials of DBT have tended to use only the most severe subgroups of BPD, and only a few studies have addressed the question of whether DBT is equally effective for the full range of BPD presentations including individuals who do not engage in parasuicidal behaviors (Blennerhassett & O'Raghallaigh, 2005; Verheul et al., 2003). It has been

suggested that DBT is best conceptualized as a treatment of self-harm and suicidal behaviors, as opposed to a treatment of BPD more broadly (Feigenbaum, 2007; Verheul et al., 2003) based upon the findings that reduction in life-threatening behaviors tends to be the strongest and most common outcome, while other symptoms such as depression, subjective misery, dissociation, interpersonal relationship problems, and feelings of emptiness are less consistently improved and may still be elevated at the end of treatment. Outcome studies tend to focus more on behavioral instability than on more internal phenomena such as disturbed sense of self, brief psychotic symptoms, and feelings of emptiness (Blennerhassett & O'Raghallaigh, 2005). In general, DBT appears to be more effective than the typical treatment clients with BPD would receive in the community; however, because of the severity and treatment-resistance of BPD, one year of treatment is often not sufficient and is not a "cure" for BPD. Rather, Stage I BPD may be most effective at establishing control over self-destructive and impulsive behaviors, and at setting a strong foundation for continued treatment. At present, only Stage I of DBT has been clearly defined and empirically evaluated. Stages two through four of DBT are not manualized and have been defined only in terms of broad principles and goals. Future theoretical and empirical studies are needed to better establish a structure for these later stages and to assess DBT's efficacy at these stages.

Many of the randomized controlled trials have also used small sample sizes and homogeneous clinical samples. There is a strong need for increased diversity in the clinical samples used in outcome studies, especially in regards to inclusion of men and racial and ethnic minorities. Most of the clinical trials have allowed a moderate degree of comorbidity in their clinical samples, which is especially important given the high degree of comorbidity typically found in individuals with BPD (Crits-Christoph, 1998; Linehan, Kanter & Comtois, 1999). Allowing a multi-diagnostic sample for the efficacy research may increase the external validity of these studies; however, there were still several diagnostic exclusion criteria, most often bipolar disorder, psychotic disorders, and cognitive disabilities, and it is important to supplement these RCTs with studies of DBT's effectiveness in naturalistic community settings.

Another complication in generalizing the findings of the DBT literature is that there is a high degree of inconsistency in the methodology of outcome studies that make it difficult to compare across studies. For example, many studies used a modified DBT protocol, such as an abbreviated protocol using only 6 months (e.g., Koons et al., 2001), modifying the skills coaching to occur in session rather than in a skills group, or adding symptom-specific skills units (e.g., adding a “dialectical abstinence” module to DBT for substance abuse disorders). While such studies provide support for the general theory and treatment frame of DBT, they do not provide support for the efficacy of standard DBT, but instead indicate that the treatment is versatile and can produce positive outcomes in a range of different clinical adaptations.

As previously described, the control or comparison treatments used in much of the efficacy research have been inadequate. In many studies, the TAU condition was unsystematic, inconsistent, minimally supervised, and may have amounted to very minimal clinical contact for the clients (Westen, 2000). The “dosage” of therapy hours and amount of supervision have been poorly controlled when comparing DBT to other treatments, making it difficult to determine whether increased therapeutic contact is partially responsible for DBT’s superiority, as opposed to characteristics of the treatment itself leading to stronger treatment outcomes (Scheel, 2000). In fact, many clients in the TAU conditions of some of the early randomized controlled trials did not even receive individual therapy during the experimental year (e.g., 27% in the Linehan et al., 1991 trial). Linehan & Heard (1993) found that after statistically controlling for hours of therapy, DBT remained superior to TAU; however, statistically controlling for treatment hours is an imperfect replacement for stronger methodological control (Scheel, 2000). Also, therapy hours were not separated by treatment type, meaning that the same number of treatment hours could represent regular outpatient therapy, or intermittent day treatment with little therapeutic continuity across the year.

Another concern related to the research literature is that Linehan is a co-author on many of the efficacy studies. As a result, the study researchers and therapists were likely highly trained and enthusiastic about the treatment model, which increases the possibility of an “allegiance

effect,” whereby the investigator’s preferred therapy tends to “win” in efficacy studies (Westen, 2000). In treatment efficacy studies, allegiance effects can account for up to 69% of variance in treatment outcome (Luborsky et al., 1999). Since the original randomized controlled trial (Linehan, 1991), support for DBT’s efficacy has been replicated by multiple independent researchers unaffiliated with Linehan or her research team, and applications of DBT have even been tested in multiple countries (Koerner & Dimeff, 2000). However, the problem of potential allegiance effects is likely still relevant. The best defense against this methodological problem is to use stronger comparison treatments for which study therapists are also likely to have a high degree of expertise and allegiance.

Several studies have attempted to move in the direction of stronger comparison treatments, but there is still a need for studies with stronger and better defined controls. Well-established alternative treatments need to be compared directly with DBT (Scheel, 2000). One obstacle to testing DBT against well-defined treatments is that psychodynamic treatments are among the most common forms of treatment for BPD, and few psychodynamic protocols have been sufficiently manualized or empirically studied to allow for comparison of the results (Westen, 2000). The primary exceptions are mentalization-based therapy (Bateman & Fonagy, 1999), and transference-focused psychotherapy (Clarkin et al., 2007), both of which have been manualized and have been empirically evaluated for the treatment of BPD. Initial studies have compared DBT to transference-focused psychotherapy, but additional research is needed to identify the comparative mechanisms of action in these treatments or to potentially identify subgroups of clients who may have a better fit and better treatment outcomes in one form of treatment compared to another. For example, DBT is a highly structured, skills-focused form of treatment that requires a large time commitment and willingness to complete homework assignments outside of therapy sessions. Not every client will be comfortable with this type of therapy, or even be able to commit to it due to outside factors such as time demands and availability of DBT programs in their vicinity. If future research supports the efficacy of multiple forms of treatment for BPD, it will be important to identify the relative strengths and applicability

of various theoretical models and modalities to different presentations or subgroups of clients with BPD.

Finally, there is a continued need for dismantling studies on the mechanisms of action in DBT. The full DBT protocol is time-intensive and requires a great deal of commitment from clients. It is not clear empirically whether all components of the standard DBT protocol contribute significantly to the outcome of the treatment, or whether some elements are unnecessary. Initial studies have suggested that DBT skills training is not effective in the absence of ongoing DBT-oriented psychotherapy (Linehan, Heard & Armstrong, 1993), but few studies have studied the incremental contribution of other key aspects of the DBT treatment protocol. Additional research is necessary to examine the basic processes underlying client change in DBT treatment (Lynch et al., 2006).

Goals of the Present Study

There is an optimistic message in the literature on treatment for borderline personality disorder. Since the inclusion of BPD in DSM-III (APA, 1980), there has been a large amount of new research, a focus on treatment development, and further development of theoretical conceptualizations of the disorder. It is clear now that positive, healthy therapeutic alliances are attainable with clients with BPD, as are treatment successes such as remission of suicidal and self-harming behaviors, improved emotion regulation, improved social functioning, and so on. With adequate treatment, many men and women who meet diagnostic criteria for BPD at one point in life will no longer do so later in life.

Dialectical Behavior Therapy has been established as one of few psychotherapeutic interventions to gain strong empirical support for the treatment of BPD. Despite DBT's emphasis on the development and maintenance of a healthy working relationship, and direct focus on altering treatment interfering behaviors or conflicts between the therapist and client, there has been very little empirical research on the quality of the therapist-client relationship in this form of treatment, or its relationship to treatment outcomes. There is reason to believe that the therapeutic alliance is particularly difficult to maintain with clients with a diagnosis of BPD, and also particularly important for clients' success in long-term treatment. The present study will evaluate the outcomes of DBT in a naturalistic setting, and investigate the quality of the therapeutic alliance, the pattern of alliance change across time, and the relationship, if any, of the alliance quality to treatment outcomes.

The present study has two primary goals. First, treatment outcomes in the DBT program will be evaluated using statistical analyses (i.e., comparison of pre- and post- treatment scores on outcome measures), and will also be assessed using a clinical significance analysis methodology (Jacobson & Truax, 1991). Second, it will examine patterns of therapeutic alliance development and treatment outcomes in a DBT program in a private practice mental health center, using a

naturalistic clinical sample of adults with chronic suicidality and problems with emotion regulation.

Clinical Significance Analysis

Clinical significance analysis is a method for classifying treatment outcomes that takes into account both the reliability of the change a client achieves in therapy, and also the meaningfulness of this change to the client's overall quality of life and level of functioning. It has been suggested that treatment outcome studies using only traditional inferential statistical analyses may provide a distorted or incomplete perspective on the true impact of a given treatment, and adding clinical significance criteria to treatment outcome studies may provide important information about individual clients' responses to treatment and the clinical impact of the client's change in therapy (Barlow, 1981; Kazdin & Wilson, 1978). It is possible for a treatment to produce statistically significant outcomes that are not clinically meaningful. As an illustration, Jacobson and Truax (1991) provided the example of a hypothetical six-month weight loss program that provides significantly better results than a control condition at an alpha level of .05, but only because the experimental weight loss program resulted in a mean weight loss of two pounds as compared to zero in the control condition. Despite being statistically more effective than a control condition, it is unlikely that most patrons of the weight loss program would be satisfied with the results or consider their weight loss to be meaningful. Clinical significance analysis (Jacobson & Truax, 1991) defines significant change in treatment as representing both statistically significant or reliable change and a return to normal functioning at the end of treatment.

Reliable change index. The Reliable Change Index (RC) determines whether change in a client's scores across time is significant and reliable (not the result of measurement error). An RC value is computed for each client, which is then compared to a cutoff criterion of 1.96, corresponding an alpha level of .05. Based upon their reliable change index values, clients are classified as having significant improvement ($RC \geq 1.96$), significant deterioration ($RC \leq -1.96$),

or non-significant change ($-1.96 < RC < 1.96$) across their time in treatment. The formulas below are used to compute the reliable change index:

$$RC = \frac{X_2 - X_1}{S_{diff}}$$

$$S_{diff} = \sqrt{2(SE)^2}$$

$$SE = s_1 \sqrt{1 - r_{xx}}$$

In the formulas above, the variable X_1 is an individual client's score at intake, X_2 is the same client's score post-treatment, S_{diff} is the standard error of difference, s_1 is the standard deviation from scale norms for a clinical population, and r_{xx} is the internal consistency or test-retest reliability of the measure.

Return to normal levels of functioning. In order to achieve clinical significance, a client's change in treatment must also reflect movement from a clinical range of symptoms at intake to the range typical of a non-clinical population at the end of treatment. Jacobson and Truax (1991) established three options (criteria a, b, and c) for defining a cut-off score that represents a recovery from a clinical range of symptoms to the range of normal functioning.

Criterion a: A client's score post-treatment must be at least two standard deviations below the mean for a clinical population, as defined by norms for the scale. Where M_1 and s_1 are the mean and standard deviation from clinical norms for the scale, the cutoff score using criterion a is:

$$a = M_1 + 2s_1$$

Criterion b: A client's score at post-treatment must fall within the range of the "functional" population. Where M_0 and S_0 are the mean and standard deviation from the norms for a non-patient sample from the general population, the formula for the cutoff score is:

$$b = M_0 - 2s_0$$

Criterion c: A client's score at post-treatment must be more likely to have been drawn from a healthy, non-patient population than a clinical population. Where M_0 and s_0 are the mean and standard deviation from the norms for a healthy, non-patient population and M_1 and s_1 are the mean and standard deviation from the norms for a clinical population on the measure of interest, the cutoff score using criterion c is calculated with the following formula:

$$c = \frac{s_0M_1 + s_1M_0}{s_0 + s_1}$$

Of the three methods of calculating the cutoff score for recovery, Criterion a is the most stringent, followed by criterion c, and finally criterion b is the most lenient. Jacobson and Truax (1991) recommend using criterion c if the norms for both the functional and clinical populations are available. Also, criterion c is the preferred method if the normative and clinical populations overlap, but in the case of non-overlapping populations, criterion b is recommended (Jacobson & Truax, 1991). For situations in which it is not possible to obtain norms for a non-clinical population, only criterion a is available.

Classification of treatment outcome. The Reliable Change Index (RC) and the cutoff score for the return to normal functioning are used together to classify clients into categories of Recovered, Improved, Unchanged, and Deteriorated. To be classified as Recovered, a client must show significant positive change on the RC and move from the clinical side of the cutoff score at intake to the healthy side at post-treatment. Clients classified as Improved have significant values for the RC, but they do not cross the cutoff score and are likely to still have elevated symptoms that make them more similar to a clinical population than the general population on the construct of interest. Unchanged refers to clients who did not have significant change as measured by the

RC and did not cross the cutoff score. Finally, clients are classified as Deteriorated if they had significant change on the RC, but in the direction of worsening of symptoms and they do not cross the cutoff score into a normal range.

Therapeutic Alliance in DBT

The present study will evaluate the quality of the therapeutic alliance and how it changes across time in treatment. There is a consensus in the literature on treatment of BPD that the therapeutic work can be very challenging, and it is important for clinicians to monitor their own emotional reactions in order to prevent burnout (Koerner & Linehan, 1997). Also, theorists and clinicians from a wide range of theoretical orientations believe that the patterns of interpersonal relationship disruption, emotional lability, and crisis-generating behaviors that are central to the diagnosis of BPD are likely to affect the therapeutic process and may arise in the relationship between the therapist and client (e.g., Bateman & Fonagy, 1999; Kernberg, 1976; Linehan et al., 2000). While the therapeutic alliance is conceptualized by some theorists as being established within the early stages of therapy and remaining relatively stable across the course of the therapy (Hilsenroth, Peters & Ackerman, 2004; Luborsky et al., 1983), or showing steady, linear improvements from intake to termination (Kivlighan & Shaughnessy, 1995), it seems unlikely clients with borderline pathology will fit this mold. Instead, in the present study, it is hypothesized that the therapeutic alliance in DBT will show variability across time, similar to the the Safran et al., (1990) theory of rupture and repair in alliance quality. The study will also examine the relationship, if any, between clients' self-report of alliance quality and their improvement in therapy. The hypotheses of the present study follow.

Hypothesis 1. Clients in the DBT program will show improvement in depression, hopelessness, and general psychiatric symptoms after one year of treatment.

Hypothesis 2. Clients with a diagnosis of BPD will be more likely than those without the diagnosis to show clinically significant improvement on outcome measures across the year of treatment.

Hypothesis 3. Client self-report ratings of therapeutic alliance quality on the Combined Alliance Scale will show variability across time in treatment.

Hypothesis 4. Clients with a diagnosis of BPD will show greater variability across time in their alliance ratings on the Combined Alliance Scale, and will be more likely than clients without BPD to show patterns of alliance consistent with Safran et al.'s (1990) theory of rupture and repair.

Hypothesis 5. There will be a significant relationship between treatment outcomes and patterns of alliance development across time. It is hypothesized that all subscales of the Combined Alliance Scale will show significant change across the treatment year for the group as a whole. Also, clients who did and did not show significant improvement on the treatment outcome measures are predicted to have different patterns of alliance during their year of treatment. Clients who achieved clinically significant change are expected to report overall higher ratings of the therapeutic alliance, and to show more improvement in alliance with time as compared to clients who did not achieve significant improvement in treatment.

METHOD

Participants

DBT program and site characteristics. The sample for this study consists of clients who have participated in one year of comprehensive outpatient DBT at a private, outpatient mental health center located near Milwaukee, Wisconsin. The center is certified by the State of Wisconsin as an outpatient mental health facility, and was established in 2005. The three founding members of the DBT treatment team at the center completed an intensive 10-day training in 2003 through Behavioral Tech, LLC, the organization founded by Dr. Marsha Linehan to provide training in DBT to mental health care providers. The DBT treatment team consisted of licensed mental health professionals including psychologists, a psychiatrist, social workers, and master's level counselors, as well as graduate student trainees who provided selected services under the supervision of a licensed psychologist.

Clients in the DBT program received an average of one hour per week of individual DBT therapy, attended a weekly 2.5 hour skills training group meeting, and had access to between-session telephone coaching with their individual therapists. All therapists providing individual or group treatment within the DBT program attended a weekly consultation team meeting aimed at increasing therapeutic skills, maintaining motivation and empathy for challenging cases, and improving continued adherence to the DBT treatment framework. Clients in the DBT program also had access to psychiatric medication management through the staff psychiatrist or through psychiatrists in the community. Emergency services such as the psychiatric emergency room, acute inpatient treatment, and brief treatment in partial hospital or day programs were used as needed. Finally, many clients in the DBT program chose to participate in adjunct treatments in the community, such as Alcoholics Anonymous, support groups, or family therapy.

Participant characteristics. The sample for this study includes 47 clients who were enrolled in the DBT program at the outpatient mental health center between the years 2005 and 2009, and consented to participate in the research protocol. Participants ranged in age from 18 to 57, with a mean age of 37.91 ($SD = 11.33$). The sample was predominantly female (91.5%). Of

the participants who self-reported their racial background, 80.9% identified as Caucasian. Other racial backgrounds represented were African American (n = 1), and biracial (African American and Latina, n = 1). Participants reported their highest level of educational achievement as completing their high school diploma (14.9%), some college or currently enrolled in an undergraduate program (27.7%), college degree (21.3%), master's degree (10.6%), and doctoral degree (2.1%), and 23.4% did not specify their educational attainment. Self-reported relationship status of participants was single (29.8%), married / committed (36.2%), divorced (21.3%), and not specified (12.8%).

Upon intake, clients were administered the SCID-I and SCID-II structured interviews to establish a working diagnostic profile based upon DSM-IV diagnostic criteria. Diagnostic information was available for 36 of the 47 participants. There was a high rate of comorbidity in the clinical sample. Clients in the DBT program carried an average of 3.97 psychiatric diagnoses. The modal number of Axis I diagnoses was 2 (range of 1 to 6), and on Axis II the modal number of diagnoses was 1 (range of 0 to 4). The most common Axis I conditions were mood disorders, with 97.2% of clients carrying at least one mood disorder diagnosis, followed by anxiety disorders (63.9%), eating disorders (25%), and substance abuse disorders (19.4%). The majority of the sample was diagnosed with at least one personality disorder, with only 4 clients having no diagnosis on Axis II. The majority of the participants with available diagnostic information carry a diagnosis of Borderline personality disorder (72.2%). See Table 1 for frequencies of diagnoses.

Table 1
Frequencies of Diagnoses from the SCID-I and SCID-II

Axis I Diagnosis	N
Mood Disorder	
Major Depressive Disorder	22
Bipolar Disorder	8
Dysthymia	5
Depressive Disorder NOS	1
Anxiety Disorder	
Panic Disorder	13
Generalized Anxiety	11
Posttraumatic Stress Disorder	8
Obsessive-Compulsive Disorder	3
Social Phobia	2
Eating Disorder	
NOS	6
Bulimia Nervosa	3
Substance Dependence	
Alcohol	4
Cocaine (in remission)	2
Opioid (in remission)	1
Other	
Schizoaffective Disorder	1
Body Dysmorphic Disorder	1
Dissociative Disorder NOS	1
Axis II Diagnosis	
Borderline Personality Disorder	26
Avoidant Personality Disorder	10
Obsessive Compulsive Personality Disorder	4
Dependent Personality Disorder	3
Paranoid Personality Disorder	3
Antisocial Personality Disorder	1
Narcissistic Personality Disorder	1
Personality Disorder NOS	
Borderline Traits	6
Obsessive-Compulsive Traits	1
Avoidant Traits	1
Dependent Traits	1

Note. The majority of clients in the sample carried multiple diagnoses.

Data Collection

The data used in the present study were collected between 2002 and 2009 as a part of ongoing research and program evaluation in an outpatient DBT program. All clients receiving treatment in the DBT program at the center were eligible to participate. At the time of their intake for the DBT program, clients completed a packet of self-report questionnaires including the Beck Depression Inventory-Second Edition (BDI-II), the Beck Hopelessness Inventory (BHS), and the Brief Symptom Inventory (BSI). Clients were all also administered two structured diagnostic interviews at the time of intake: the Structured Clinical Interview for DSM-III Axis I Disorders (SCID-I) and the Structured Clinical Interview for DSM-III for Axis II Disorders (SCID-II). Between their intake and entry into the full DBT program, clients completed a “pretreatment stage,” during which they worked with an individual therapist on orientation to the program, setting treatment goals, and increasing motivation and readiness for participation in the comprehensive DBT program. This pretreatment phase lasted, on average, 9.26 sessions ($SD = 6.05$). At the conclusion of the pretreatment phase, clients entered the full treatment program, including weekly individual therapy, a weekly skills training group, and access to phone coaching with the individual therapist.

Upon their entry into the full DBT program, clients were invited to participate in monthly data collection for the purpose of program evaluation and research within the center. No incentives were offered for participation in research, and there were no penalties associated with opting out of research activities at any time. Clients who chose not to participate in the data collection did not complete any research-related questionnaires or assessments after their intake. Those who did choose to participate in data collection began completing self-report questionnaire packets including the BDI-II, BHS, BSI, and the Combined Alliance Scale on a monthly basis for one year. These monthly questionnaire packets were distributed in skills group meetings during the last week of each calendar month. Clients had the option to complete the packets during their regular break time during the group, or to take the packets home and return them at their next skills group meeting. At the time of intake, all clients were assigned an identification number

which was used to match the monthly questionnaire packets; no other identifying information appeared on the packets.

Materials

Structured Clinical Interview for DSM-III Axis I Disorders (SCID-I). The SCID-I is a semi-structured diagnostic interview that provides provisional diagnoses of Axis I psychiatric disorders based upon diagnostic criteria from the DSM-III (APA, 1980). The SCID-I includes items assessing symptoms associated with mood disorders, trauma, substance abuse, psychotic symptoms, and eating disorders. For each diagnostic category, a client must endorse a specified number of symptoms corresponding with DSM-IV-TR criteria in order to receive a diagnosis on the SCID-I. Administration of the SCID-I takes approximately one hour. The SCID-I has good inter-rater reliability, ranging from .57 to 1.0 for different diagnostic categories (Lobbestael, Leurgens & Arntz, 2010; Zanarini et al., 2000). The validity of SCID-I diagnoses has been found to be superior to intake diagnoses made by psychiatrists in routine care; however, a combination of the SCID-I interview and review of prior medical records provided the best predictive validity (Basco et al, 2000). The clinician version of the SCID-I was administered by trained graduate student clinicians to all new clients shortly after their intake for the DBT program.

Structured Clinical Interview for DSM-IV Axis II Disorders (SCID-II). The clinician version of the SCID-II diagnostic interview was used to diagnose Axis-II conditions based upon DSM-IV (APA, 2000) diagnostic criteria. The SCID-II follows a similar format to that of the SCID-I, but assesses symptoms and characteristics of Axis-II personality disorders. The SCID-II interview takes approximately 30 minutes to one hour to administer, and was conducted by graduate student clinicians. The SCID-II has inter-rater reliability of .82 - .91 for the diagnosis of Borderline Personality Disorder, and .60 - .98 for other personality disorders (Fogelson, Neuchterlein, Asarnow, Subotnik & Talovic, 1991; Lobbestael, Leurgans & Arntz, 2010; Maffei et al., 1997). The validity of the SCID-II has been evaluated by comparing SCID-II diagnoses to diagnoses of the same clients based on longitudinal assessments conducted by their treatment providers (Skodol, Rosnick, Kellman, Oldham & Hyler, 1988). The SCID-II has been found to

have better predictive validity for some disorders than others, with Narcissistic Personality Disorder being the weakest (.45) and Antisocial Personality Disorder (.95) having the best predictive validity. For the diagnosis of Borderline Personality Disorder, the SCID-II has good predictive validity (.85; Skodol et al., 1988).

Beck Depression Inventory - Second Edition (BDI-II). The BDI-II (Beck, Steer & Brown, 1996) is a 21-item self-report measure of symptoms of depression. Each item has four response options in ascending order of symptom severity. The coefficient alpha for internal consistency among adult psychiatric outpatients was .92 and the measure has test-retest reliability of .93 for a period of one week (Beck, Steer & Brown, 1996). The BDI-II has been demonstrated to have good convergent validity with the previous version of the measure, the BDI-IA ($r = .93$), as well as with the Hamilton Psychiatric Rating Scale for Depression ($r = .71$). On the BDI-II, a total score of 0-13 is considered minimal range, 14 - 19 is mild, 20 - 28 is moderate, and 29 - 63 is severe. The norms for adult psychiatric outpatients, derived from a sample of 200, indicate a mean score of 22.45 and a standard deviation of 12.75 (Beck et al., 1996).

Beck Hopelessness Scale (BHS). The BHS (Beck & Steer, 1993; Beck, Weissman, Lester & Trexler, 1974) is a 20-item self-report measure of the client's level of pessimism and general lack of hope for the future. Each item is answered "true" or "false." The scale has demonstrated good internal consistency (.93) and good concurrent validity with clinician ratings of clients' hopelessness ($r = .62 - .86$) and with other measures of hopelessness ($r = .60 - .63$; Beck et al., 1974). Test-retest reliability for one week was measured at .69 in a sample of outpatients (Beck & Steer, 1988).

Brief Symptom Inventory (BSI). The BSI (Derogatis, 1993) is a self-report symptom measure consisting of 52 items rated for intensity of distress on a 5-point scale from "not at all" to "extremely." The measure covers nine symptom dimensions: somatization, obsession-compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism, as well as a Global Severity Index that serves as an overall measure of symptom severity. In the present study, only the Global Severity Index is used. The BSI is a

shortened version of the SCL-R-90 (Derogatis, 1975) which measures the same symptom dimensions. Correlations between the BSI and SCL-R-90 are high (.92 to .99; Derogatis, 1993). The BSI has been reported to have good internal consistency (.71 to .85) and test-retest reliability (.90; Derogatis & Melisaratos, 1983).

Combined Alliance Scale (CAS). The CAS (Hatcher & Barends, 1996) is a measure of the client's perceptions of the quality of several aspects of the relationship with his or her individual therapist. The CAS was developed through a factor analysis of three of the most widely used measures of therapeutic alliance: the California Psychotherapy Alliance Scales (CALPAS; Gaston, 1991), the Penn Helping Alliance Questionnaire (HAQ; Alexander & Luborsky, 1986), and the Working Alliance Inventory (WAI; Horvath & Greenberg, 1989). Examination of the joint factors from this factor analysis yielded the five subscales of the CAS: Confident Collaboration, Agreement on Goals and Tasks, Bond Scale, Idealized Relationship, and Dedicated Patient. The Confident Collaboration subscale assesses the client's feeling of constructive cooperation with the therapist in session, and belief that their work together will lead to positive results. Agreement on Goals and Tasks measures the extent to which the client feels that he/she and the therapist have worked together to form a mutually agreed upon conceptualization of the problem and plan for addressing it in treatment. The Bond Scale reflects feelings of warmth and mutual liking and respect between the therapist and client. The Idealized Relationship subscale assesses the client's ability and willingness to constructively disagree with the therapist. The Dedicated Patient subscale is made up of reverse-keyed items about the client's engagement problematic behaviors such as withholding information from the therapist in session, so that a high score on the scale reflects minimal therapy interfering behaviors. Each subscale is made up of five items, each rated on a Likert scale from 1 to 7, yielding total subscale scores from 7 to 35, with higher scores reflecting stronger alliance. The subscales of the CAS have been found to have good internal reliability, with coefficient alphas ranging from .84 to .91 (Ackerman, Hilsenroth, Baity & Blagys, 2000). CAS alliance scores have also been found to be significantly

correlated with clients' subjective view of their improvement in therapy and the helpfulness of their treatment (Hatcher et al., 1996).

Planned Analyses

It is hypothesized that clients will show significant improvement in depression, hopelessness, and general psychiatric symptoms after a year of DBT. In order to test this hypothesis, paired t-tests will compare clients' intake values on the BDI-II, BHS, and BSI-Global Severity Index to their values on these same measures after 12 months of treatment. Clients' treatment outcomes will also be evaluated for clinical significance using the criteria established by Jacobson and Truax (1991). Clinical significance analysis will classify each client as Recovered, Improved, Unchanged, or Deteriorated on each of the three outcome measures.

For the remainder of the analyses in the present study, clients will be dichotomized into "improved" and "not improved" categories based upon the results of the clinical significance analysis. Clients will be considered "improved" if they were categorized by the clinical significance analysis as Recovered or Improved on at least one of the three outcome measures (BDI-II, BHS, and BSI-Global Severity Index). Clients will be considered "not improved" if they were classified as Unchanged or Deteriorated on all outcome measures.

The second hypothesis is that clients with BPD will show greater improvement in DBT treatment than clients who do not have a diagnosis of BPD. Fisher's Exact Test will be calculated to determine whether clients diagnosed with BPD on the SCID-II diagnostic interview were more likely than clients without a diagnosis of BPD to achieve clinically significant improvement after one year of treatment.

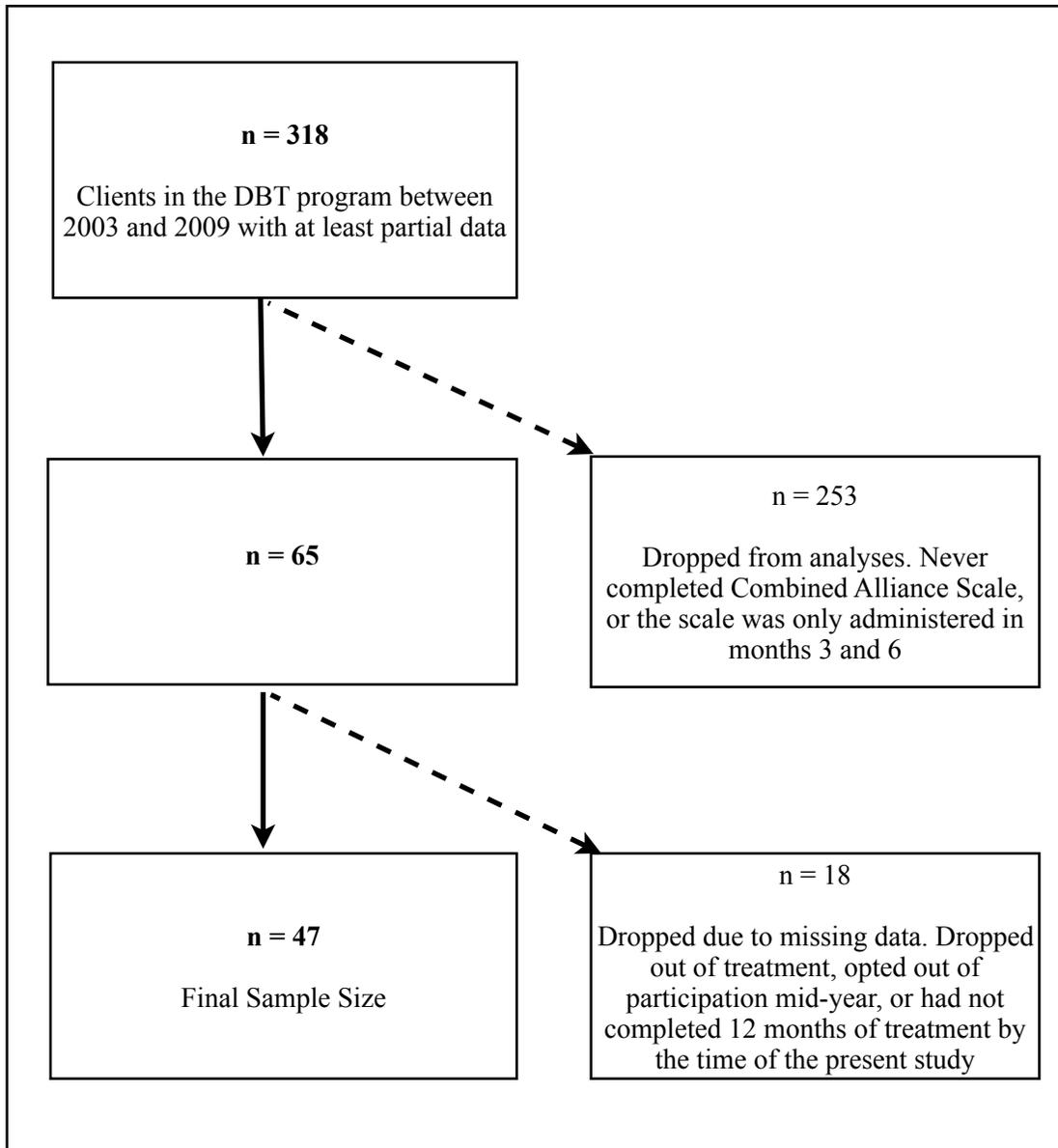
The third hypothesis is exploratory in nature. It is predicted that clients will show patterns of variability in their alliance ratings from month to month across the year of treatment. In order to detect variability in alliance quality across time, descriptive statistics for the Combined Alliance Scale and graphs of monthly alliance scores will be examined both at the level of the overall sample and of the individual client.

The fourth hypothesis predicts that clients with BPD will show more frequent ruptures in the therapeutic alliance and greater variability across time in their alliance ratings on the Combined Alliance Scale as compared to clients without a diagnosis of BPD. Independent samples t-tests will be calculated to compare clients with and without a diagnosis of BPD on the frequency of acute ruptures in alliance quality. For the purpose of this study, an alliance rupture was defined as a shift of ten points or more on a subscale of the Combined Alliance Scale in subsequent months. A ten-point change in a subscale score is roughly equivalent to each of the five items on the subscale being rated two steps lower on the seven-point Likert scale (e.g., changing from “6 - quite a lot” to “4 - moderately”). A second set of independent samples t-tests will compare clients with and without a diagnosis of BPD on their range of alliance scores on each subscale of the Combined Alliance Scale (calculated by subtracting the lowest value a client reported for a subscale from his or her largest value for that subscale during the year of treatment).

Finally, in order to test the fifth hypothesis, the relationship between alliance ratings and improvement in treatment will be assessed using doubly multivariate analysis of variance. First, the test of ‘flatness’ tests the main effect of time for alliance ratings, in order to examine whether subscale scores on the Combined Alliance Scale show significant variability across three timepoints (month 1, month 6, and month 12 of treatment) for the overall clinical sample. Second, the test of ‘levels’ tests the main effect of treatment outcome for alliance ratings. Clients who did and did not significantly improve in treatment will be compared on their ratings of alliance, in order to determine whether clients who improve in treatment report higher alliance quality on any subscales of the Combined Alliance Scale. Finally, the test of ‘parallelism’ tests the interaction effect for time and improvement in therapy. Clients who did and did not achieve clinically significant change in treatment will be compared on their patterns of alliance change across time. It is predicted that clients who improved in treatment will show a greater pattern of improvement in alliance across time.

Missing data. Only clients who completed at least one year of treatment and participated in data collection across the entire year were included in this study ($n = 47$). Figure 2 below displays the process of choosing cases for inclusion versus exclusion in the present study. The modal number of missing data points was 1 (median = 2), out the 13 measurement periods, including the intake assessment and twelve monthly measurements. For the majority of analyses, clients who were missing the relevant data (e.g., no SCID-I or SCID-II diagnosis available) were excluded. For analyses requiring data from specific timepoints, an adjacent month's data was substituted for the missing value when possible. For example, a client's BDI-II score for month 1 would be used in place of a missing intake value, or a client's score for month 11 would be substituted for a missing month 12 value.

Figure 2

Flow Chart of Inclusion and Exclusion of Cases

RESULTS

In presenting the results, first the descriptive statistics for the outcome measures (BDI-II, BHS, BSI-Global Severity Index) are presented, and the results of statistical and clinical significance analyses of treatment outcomes for the DBT program are described. Next, descriptive and inferential statistics regarding the patterns of change in the therapeutic alliance across time will be presented. Finally, the results of statistical analyses assessing the relationship between treatment outcome and alliance ratings will be described.

DBT Treatment Outcomes

Paired samples t-tests were computed to assess change in the three outcome measures (BDI-II, BHS, and BSI Global Severity Index) from intake to month twelve of treatment in the DBT program. For clients with missing data for the BDI-II, BHS, or BSI at the time of intake ($n = 12$), data from month one were substituted. Results of the paired t-tests indicate a statistically significant reduction in reported symptoms on each of the three outcome measures at the end of one year of treatment (see Table 2). Each of the three comparisons had a large effect size by Cohen's (1988) guidelines.

Table 2

Paired Samples t-tests for Change in BDI-II, BHS, and BSI Scores from Intake to Month 12

Variable	Intake		Month 12		df	t	η^2
	M	SD	M	SD			
BDI-II	31.45	11.06	23.82	13.17	32	3.84 ***	0.32
BHS	11.14	5.58	9.26	5.70	34	2.30 *	0.14
BSI - GSI	1.73	0.67	1.32	0.79	33	3.37 **	0.26

Note. * $p < .05$; ** $p < .01$; *** $p < .001$

Clinical Significance. Using the criteria for clinical significance analyses (Jacobson & Truax, 1991), analyses were conducted to examine change at the level of the individual client for each of the three outcome measures, and to assess whether these outcomes were clinically meaningful.

Reliable Change Index. A reliable change index of 1.96 corresponded to change of 9.34 points on the BDI, 8.36 points on the BHS, and 1.19 points on the BSI-Global Severity Index. The frequencies and percentages of clients achieving reliable change on each outcome measure are displayed in the top section of Table 3.

Return to normal levels of functioning. Because both clinical and non-patient norms were available for each of the outcome measures, and the clinical and non-patient norms overlap on each, Jacobson and Truax's criterion 'c' was used to establish the cutoff score for clinical significance. Cutoff scores were calculated for the BDI-II, BHS, and BSI-Global Severity Index (16.88, 6.46, and 0.61, respectively) and clients with scores falling below these cutoffs at month twelve were categorized as "recovered" (see table 3). Clients who were below these cutoff scores on the intake assessment (5 clients on the BDI-II, 11 clients on the BHS, and 2 clients on the BSI-Global Severity Index) were not classifiable, as it was impossible for them to "return to normal" functioning in a domain for which they did not have elevated symptoms at intake. These clients were excluded from the remainder of the clinical significance analyses.

Results of Clinical Significance Analysis. Using a combination of information from the reliable change index and the return to normal functioning criterion, clinical significance analysis classifies therapy outcomes into four broad categories: Recovered, Improved, Unchanged, and Deteriorated. Frequencies of clients classified into each of these categories on the outcome measures are provided in Table 3.

Table 3

Frequencies and Percentages for Clinical Significance Analysis

	BDI-II		BHS		BSI	
	n	%	n	%	n	%
<u>Reliable Change Index</u>						
positive change	20	44.4	6	13.3	14	31.8
non-significant change	23	51.1	38	84.4	27	61.4
negative change	2	4.4	1	2.2	3	6.8
<u>Return to Normal Functioning</u>						
Yes	11	24.4	8	17.8	7	15.9
No	29	64.4	26	57.8	35	79.5
Unclassified	5	11.1	11	24.4	2	4.5
<u>CSA classification</u>						
Recovered	10	22.2	5	11.1	6	13.6
Improved	10	22.2	1	2.2	8	18.2
Unchanged	18	40	27	60	24	54.5
Deteriorated	2	4.4	1	2.2	3	6.8
Unclassified	5	11.1	11	24.4	3	6.8

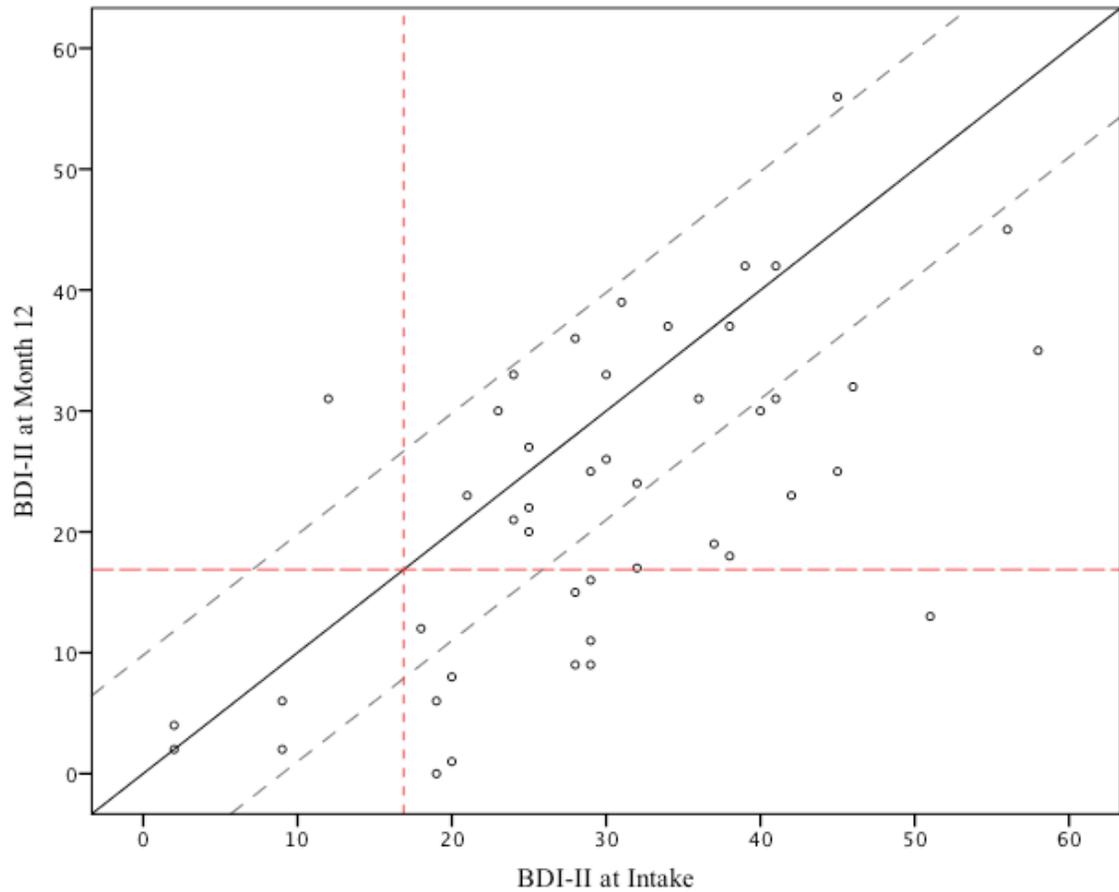
The BDI-II had the best rate of improvement, with 44.4% of the sample being either Improved or Recovered on this measure. In contrast, over half of the sample had non-significant change on the BHS and BSI-Global Severity Index (60% and 54.5%, respectively), indicating that the treatment was likely more effective at reducing symptoms of depression than treating hopelessness or general psychiatric symptoms. Despite the lower rates of recovery on the BHS and BSI-Global Severity Index, the majority of the clients classified as Unchanged on these measures had small, positive changes that did not reach the level of significance indicating that some small gains had been made in treatment. Across outcome measures, the sample had a low rate of Deterioration, with only four clients experiencing an increase in symptoms on any measure across the year of treatment (three clients worsened on one outcome measure each, and one client worsened on all three measures).

Figure 2 displays a scatterplot of clients' pre- and post-treatment scores on the BDI-II, and illustrates the categories of change for the clinical significance analysis. The solid diagonal line represents the line of zero change from intake to month twelve. The two dashed diagonal lines on either side of this line represent the reliable change index cutoffs. On the BDI-II, the cutoff represents change of 9.34 points in either direction of the zero change line. The 23 clients falling between these dashed, diagonal lines were classified as "unchanged" according to the reliable change index criterion. Clients falling to the right of the diagonal band had reliable, positive change, and the two clients falling to the left of the band had reliable, negative change indicating an increase in depressive symptoms.

The return to normal functioning criterion is examined using the vertical and horizontal dashed lines. The vertical, dashed line indicates the cutoff for the clinical range of scores on the BDI-II at the time of intake. All clients to the right of the vertical line had clinically elevated depression when they entered treatment, and the five clients falling to the left of the line were already in the healthy range when they entered treatment, meaning that they were not classifiable in the clinical significance analysis. The horizontal, dashed line represents the cutoff score for recovery at the completion of therapy (i.e., return to normal functioning criterion), which was a score of 16.88 on the BDI-II. The ten clients falling below the horizontal cutoff line, and to the right of the diagonal lines are classified as Recovered. Above the horizontal cutoff line, the ten cases to the right of the diagonal band are Improved, and the two cases to the left of the diagonal band are Deteriorated. Finally, one client moved from the clinical range at intake to the healthy range at the end of treatment, but was not classified by the clinical significance analysis because the magnitude of change was not sufficient to meet the reliable change criterion (e.g., change was small and may have been due to measurement error). In figure 3, this client is represented by the dot in diagonal "non-significant change" band that is to the right of the vertical cutoff line and below the horizontal cutoff line.

Figure 3

Scatterplot of the Results of Clinical Significance Analysis for the BDI-II



Figures 4 and 5 display the scatterplots for the BHS and the BSI-Global Severity Index. In comparing the scatterplot for the BHS to the other two measures, it is clear that the BHS has a higher proportion of clients falling below the clinical range at intake, and a broader diagonal “non-significant change” band, which contributed to the lower proportion of clients achieving clinically significant change on this measure.

Figure 4

Scatterplot of the Results of Clinical Significance Analysis for the BHS

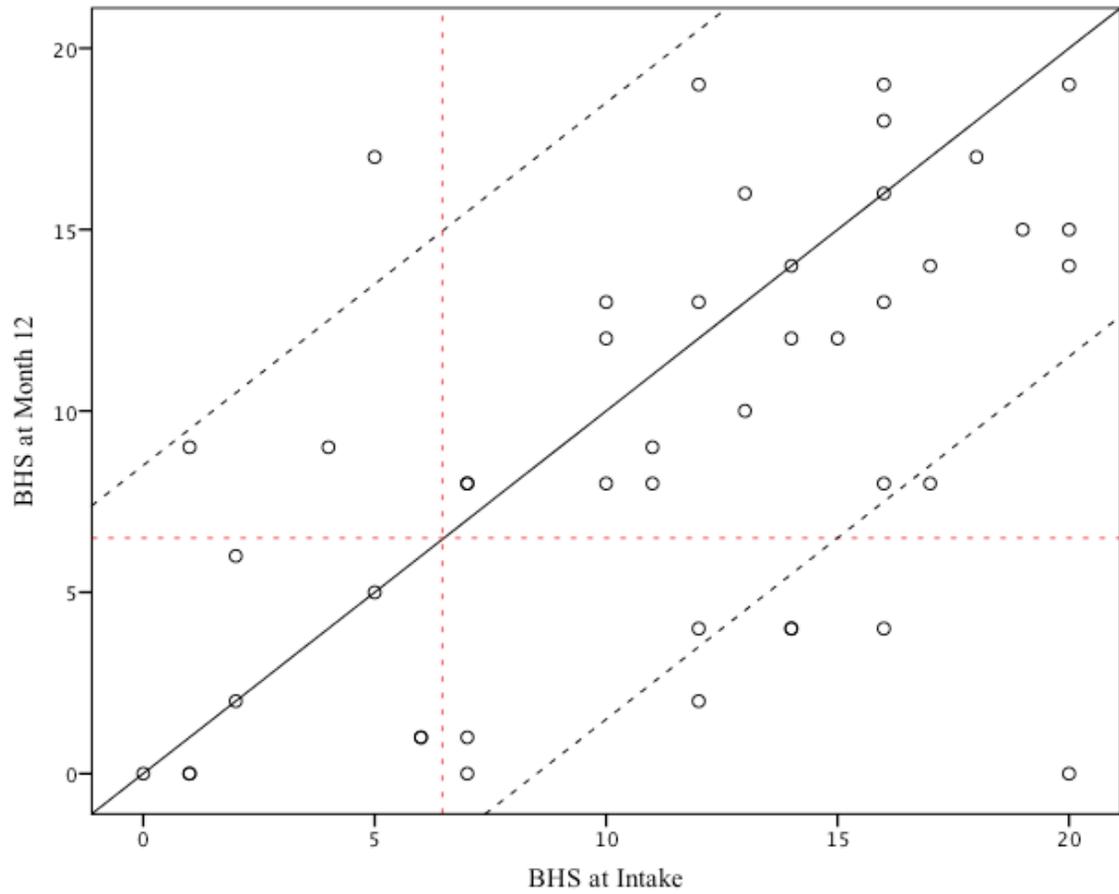
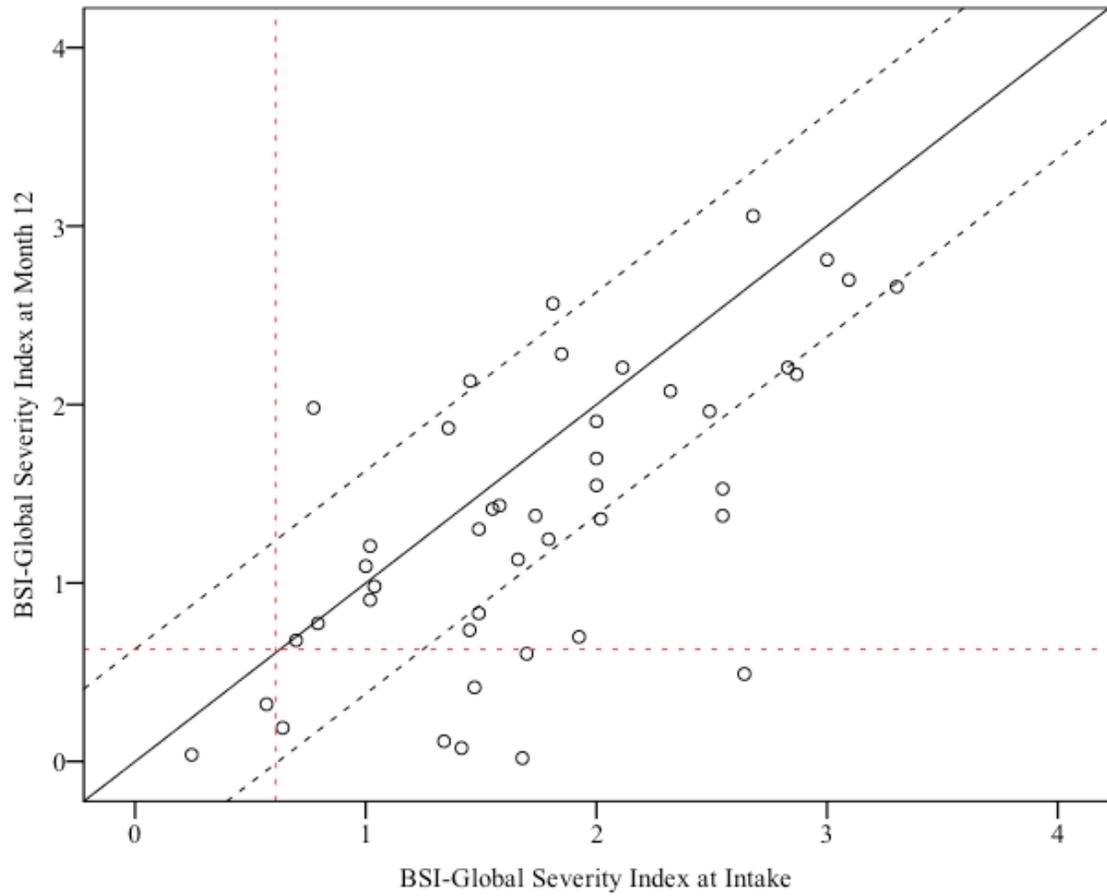


Figure 5

Scatterplot of the Results of Clinical Significance Analysis for the BSI-Global Severity Index



Clinical Significance Analysis Summary. Collapsing across the three outcome measures, nearly half (48.9%) of the clients in the DBT program were Improved or Recovered on at least one outcome measure, with 10% of the sample showing significant improvement on all three. For the remainder of the analyses in the present study, the term “Improved” will refer to those clients ($n = 22$) who were classified as either Improved or Recovered on at least one of the three outcome measures in the clinical significance analysis, and the term “Not Improved” will refer to clients ($n = 23$) who were either Unchanged or Deteriorated on all outcome measures.

Treatment Outcome by Diagnosis

To test the hypothesis that clients with a diagnosis of BPD ($n = 25$) would be more likely to benefit significantly from the treatment than those without a diagnosis of BPD ($n = 9$), Fisher’s exact test was computed to compare improvement in treatment between clients with a diagnosis of BPD and those without the diagnosis. Results indicated a significant association between BPD diagnosis and improvement in treatment ($p = .04$, Fisher’s exact test). A significantly larger proportion of clients with BPD improved on the outcome measures at the end of one year (64%) compared to clients without a diagnosis of BPD (22.2%). Examination of the Phi Coefficient indicates a medium effect size ($\phi = .37$, $p = .03$). Examination of demographic variables of clients with and without a diagnosis of BPD reveals that the two groups of clients were similar in age, educational level, race, and number of comorbid diagnoses.

Therapeutic Alliance Ratings Across Time

The Combined Alliance Scale comprises five subscales (Confident Collaboration, Agreement on Goals and Tasks, Bond Scale, Idealized Relationship, and Dedicated Patient). Higher scores reflect stronger alliance. Table 4 below displays the means (higher scores reflect stronger alliance), standard deviations, and intercorrelations of the five subscales, averaged across twelve monthly measurements. The scale means were all relatively high (close to the scale maximum) and there was little difference among the subscales. As expected, given that the subscales are conceptually related and measured on commensurate scales, the subscales were all significantly intercorrelated with medium to large correlation coefficients.

Table 4

Descriptive Statistics and Intercorrelations for the Five Subscales of the CAS

Measure	M	SD	1	2	3	4
1. Confident Collaboration	28.63	4.55	--			
2. Agreement on Goals and Tasks	29.63	4.51	.85 ***	--		
3. Bond Scale	28.38	4.99	.73 ***	.82 ***	--	
4. Idealized Relationship	32.21	2.57	.52 ***	.48 **	.32 *	--
5. Dedicated Patient	29.55	3.43	.69 ***	.58 ***	.47 **	.52 ***

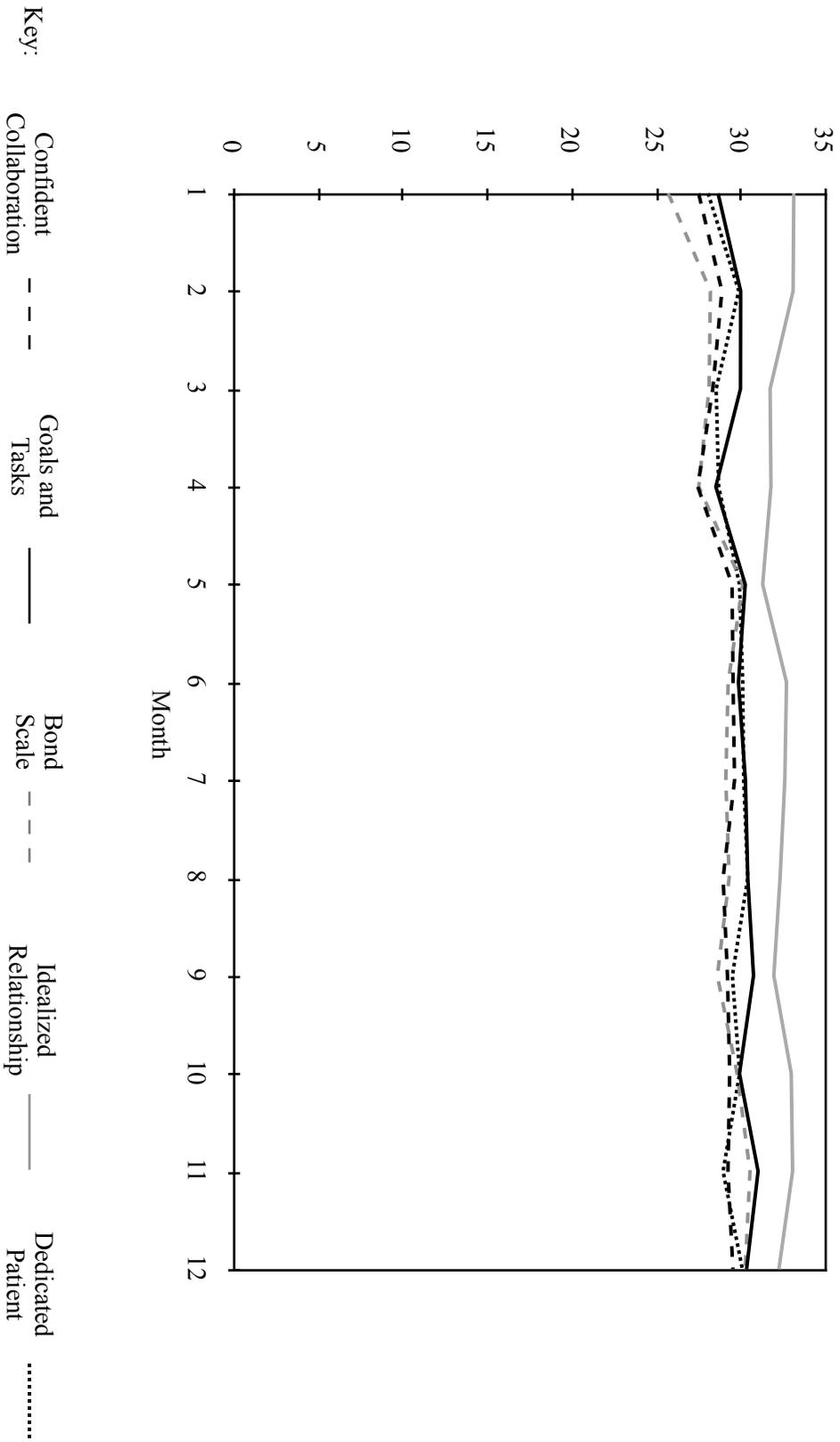
Note. Scale maximum score is 35; scale minimum score is 7. n = 47

*p < .05; **p < .01; ***p < .001

It was hypothesized that each of the five CAS subscale scores would show change across time, with significant variability from month to month. Sample means for each of the twelve monthly assessment periods were graphed to examine change across time in each of the subscales. As seen in Figure 6, CAS subscale means all appear flat across time, showing minimal month-to-month variability in alliance ratings. In each of the subscales, monthly fluctuations are limited to approximately a five-point range. From these graphs, it would appear that a strong client-therapist relationship is established early in treatment on each aspect of the therapeutic alliance, and the alliance remains stably high across the year of treatment. This finding is consistent with much of the previous theoretical and empirical literature on the therapeutic alliance, which suggests a rapid increase in alliance in the beginning of therapy, and then a stable plateau in ongoing treatment (e.g., Hilsenroth et al., 2004).

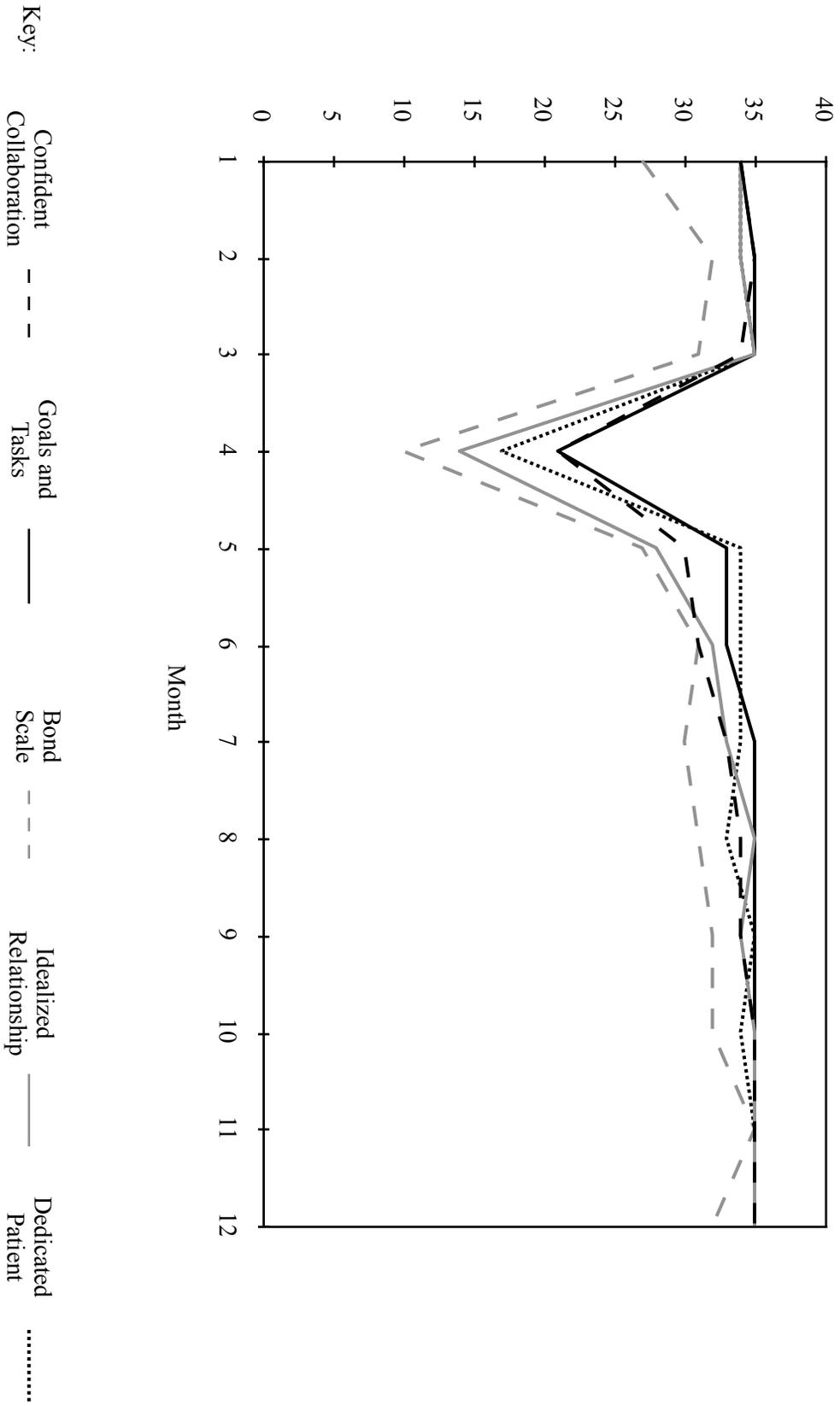
Figure 6

Sample Mean Scores for CAS Subscales by Month



As suggested by Horvath and Symonds (1991) and Safran and Muran (2000), using sample means for alliance ratings tends to average out individual variability across measurements and make the alliance appear more stable than is actually the case for most clients. Next, an individual level of analysis was conducted to examine changes in alliance ratings from month to month for each individual client. Graphs of individual clients' alliance ratings were screened for patterns of change across the year of treatment. Figure 7 depicts one such graph of one client's CAS subscale scores across time in treatment. Figure 7 illustrates a significant decrease and increase in alliance across the span of three months (months three through five), forming a distinct "V" shape in the graph for all subscales. In this particular example, the five subscales are parallel and vary together, indicating a global decline and return to baseline in all aspects of the alliance in this three month period. This appears to correspond to the theories of rupture and repair in the therapeutic alliance (e.g., Safran, Crocker, McMain & Murray, 1990). This particular client's graph was chosen for display not because it is representative of the overall sample, but because it illustrates an example of month-to-month variability that would not have been detected in analyses that average across clients for the same subscale, or analyses that average across timepoints for the same client on a given subscale. The pattern of change depicted in this client's alliance ratings is likely to be both statistically and clinically important to identify. Through visual examination of CAS subscale graphs, similar patterns of variability were found in approximately half of the sample, suggesting that a more detailed level of analysis is needed to detect actual patterns of fluctuation in alliance across the year of DBT treatment.

Figure 7
Sample Graph of One Client's CAS Subscale Ratings Across Twelve Months



In order to better detect individual changes in CAS subscale scores from month to month, difference scores were computed for each client on each subscale, between each of the twelve monthly timepoints. In particular, the data were scanned for difference scores of ten points or more in subsequent months. Of the 47 cases screened, 59.6% of clients had at least one ten-point change in an alliance subscale from one month to the next. Nineteen percent of the sample had four or more such ten-point shifts in alliance. These ten-point shifts were distributed across all five subscales of the CAS (see table 5).

Table 5

Frequencies of clients with at least one 10-point shift in alliance ratings by subscale

	N	%
Confident Collaboration	7	14.9
Goals and Tasks	10	21.3
Bond Scale	13	27.7
Idealized Relationship	11	23.4
Dedicated Patient	18	38.3

Variability in Alliance Ratings by Diagnosis

It was hypothesized that clients diagnosed with BPD would have more change in alliance scores across time, reflecting the heightened instability of relationships characteristic of this disorder. Independent samples t-tests were computed to compare clients who were diagnosed with BPD on the SCID-II diagnostic interview to those who were not diagnosed with BPD, on the number of ten-point or greater shifts in CAS subscale scores they reported from one month to the next. Results indicated that clients with a BPD diagnosis had more frequent ten-point shifts in alliance ratings than those without BPD on the Confident Collaboration and Bond Scales, with large effect sizes for both scales. See table 6 for group descriptives and t-test values. Items on the Confident Collaboration scale address clients' feelings about the likelihood that working closely with their therapists will lead to positive changes in their lives, while the Bond Scale items address feelings of mutual trust, liking, warmth, and respect between client and therapist. Frequent, large shifts in these two scales among clients with BPD may reflect interpersonal dynamics that are common in this diagnostic population, such as self-invalidation and sensitivity to cues of rejection from the environment (e.g., Bond Scale item "I feel my therapist cares about me even when I do things that he/she does not approve of"), as well as fluctuations of self-efficacy with hopelessness (e.g., Confident Collaboration item "Do you feel that even though you might have moments of doubt, confusion, or mistrust, that overall therapy is worthwhile?").

Table 6

Independent Samples t-tests for Number of 10-point Shifts in Overall CAS Scores and Each of the Five Subscales

Variable	BPD		non-BPD		df	t	η^2
	M	SD	M	SD			
CAS - Total	2.23	2.83	0.90	1.29	33	1.93	
Confident Collaboration	0.31	0.62	0.00	0.00	25	2.54 *	0.16
Agreement on Goals and Tasks	0.27	0.60	0.30	0.48	34	-0.14	
Bond Scale	0.58	0.81	0.10	0.32	34	2.54 *	0.16
Idealized Relationship	0.42	0.95	0.10	0.32	34	1.53	
Dedicated Patient	0.65	0.94	0.40	0.52	30	1.03	

Note. * $p < .05$

A second set of independent samples t-tests were computed to compare the ranges of scores on the CAS for clients with and without a diagnosis of BPD, to determine whether clients with a BPD diagnosis are more likely to report a broader range of fluctuation in alliance ratings. The range of scores was computed for each client on each subscale by subtracting the client's lowest value for a given subscale from that client's highest value for the same subscale across the twelve monthly ratings. Results of the independent samples t-tests indicate that there are no significant differences between clients with and without a diagnosis of BPD in the range of scores on any of the CAS subscales (see table 7). This indicates that while clients with BPD experienced more dramatic shifts in alliance ratings (i.e., large changes from one month to the next), the two groups do not differ in the range of scores they report for these measures across the year of treatment.

Table 7

Independent Samples t-test for Range of Scores on Each Subscale of the CAS

Variable	BPD		non-BPD		df	t
	M	SD	M	SD		
Confident Collaboration	8.62	4.02	9.50	1.96	34	-0.66
Agreement on Goals and Tasks	8.42	5.01	8.80	3.52	34	-0.22
Bond Scale	10.69	6.77	11.10	4.04	34	-0.18
Idealized Relationship	7.96	5.30	7.20	4.05	34	0.41
Dedicated Patient	10.50	5.78	10.80	4.87	34	-0.15

note. All comparisons are non-significant.

Alliance Ratings and Treatment Outcome

A doubly-multivariate analysis of variance was performed to examine the relationships among subscales of the CAS across time, and differences in alliance ratings between clients who did and did not achieve clinically significant change on the outcome measures. Doubly multivariate analysis of variance is a repeated-measures variation of MANOVA, which tests flatness, levels, and parallelism. The test of flatness examines whether the overall sample responded significantly differently to some measures than others. In the present study, the test of flatness examines whether some subscales of the CAS were rated significantly higher than others by the overall sample of clients. The test of levels assesses whether one group on average scores higher than the other on the set of dependent variables. In the present study, the test of levels tests whether there is a difference in the overall quality of the alliance (averaged across subscales) in clients who improved significantly versus those who did not improve. That is, did clients who significantly improved in treatment report higher overall levels of alliance with their therapists? Finally, the test of parallelism measures whether two groups have parallel profiles; that is, do two groups have similar patterns of change across time or is there a significant interaction effect? In the present study, the test of parallelism tests whether clients who significantly improved on

outcome measures at the end of the year had different patterns of CAS alliance ratings across time than did clients who did not achieve clinically significant change.

Data screening and assumptions. Doubly multivariate analysis has several assumptions that must be met in order for the analyses to have sufficient power and for accuracy of the interpretation of the results. The assumptions for doubly multivariate analysis are similar to those for standard multivariate analysis of variance (MANOVA).

Sample size. Because of small sample size and n-size assumptions for doubly multivariate analysis, three of the twelve data points (month 1, 6, and 12) were chosen for comparison. Group sizes were small but equal in size, and consistent with assumptions of normality for doubly multivariate analysis, there were more cases than dependent variables in each cell (i.e., greater than $n = 15$ for each group; Tabachnick & Fidell, 2001). Descriptive statistics for the two groups are provided in table 8.

Table 8

Descriptive Statistics for CAS Subscales by Month and by Treatment Response

CAS Subscale	Month 1		Month 6		Month 12	
	M	SD	M	SD	M	SD
	Improved (n = 22)					
Confident Collaboration	27.40	5.55	30.09	5.08	30.19	4.24
Agreement on Goals and Tasks	28.89	5.07	30.41	4.96	31.81	3.27
Bond Scale	25.75	6.00	29.91	5.65	30.80	4.68
Idealized Relationship	31.65	4.56	32.18	3.46	32.71	3.12
Dedicated Patient	27.40	5.56	30.14	4.42	31.19	3.53
	Not Improved (n = 23)					
Confident Collaboration	28.14	5.08	28.75	5.69	29	4.71
Agreement on Goals and Tasks	29.32	5.08	29.50	5.46	29.09	4.33
Bond Scale	26.05	6.85	28.26	5.24	29.86	4.97
Idealized Relationship	33.14	2.71	33.50	1.96	31.91	4.85
Dedicated Patient	29.45	4.27	29.95	5.00	29.17	5.66

Outliers. Univariate outliers were screened by examining z-scores for each dependent variable. No univariate outliers were found at an alpha level of .01. Data were also screened for multivariate outliers using an alpha level of .01 for Mahalanobis' Distance ($\chi^2(15) = 30.58$). All values for Mahalanobis' Distance were well under this cutoff, indicating an absence of multivariate outliers.

Normality. Skewness and kurtosis values were examined for all dependent variables (see Table 9 for values). Because several skewness values appeared large, z scores were examined to assess the significance of the skewness. Z scores were computed for each dependent variable by dividing the skewness value by the skewness standard error value. Dependent variables with skewness values significant at $\alpha = .01$ (absolute value of $z > 2.58$) were considered to be significantly skewed and in need of transformation. Skewed variables included Confident Collaboration at month 6, Idealized Relationship at all three timepoints, and Dedicated Patient at month 12. All dependent variables were transformed in order to keep the variables commensurate in their scale of measurement. Variables were transformed using the formula $\text{Log}_{10}(36 - x)$, where 36 is a constant derived by adding 1 to the highest value for the scales. After the transformation, all skewness and kurtosis values were in an acceptable range (see table 9).

Table 9
Scale Normality for CAS Subscales by Month

CAS Subscale	Month 1		Month 6		Month 12	
	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis
	Before Transformation					
Confident Collaboration	-0.22	-1.20	-1.18 *	1.06	-0.19	-1.32
Goals and Tasks	-0.82	0.55	-0.91	-0.10	-0.47	-0.80
Bond Scale	-0.41	-0.67	-0.91	0.68	-0.65	-0.92
Idealized Relationship	-1.76 *	2.49	-1.24 *	0.51	-1.97 *	4.71
Dedicated Patient	-0.88	0.67	-0.87	-0.47	-1.06 *	0.54
	After Transformation					
Confident Collaboration	-0.89	-0.20	-0.30	-1.05	-0.54	-1.30
Goals and Tasks	-0.50	-1.06	-0.17	-1.46	-0.44	-1.35
Bond Scale	-0.88	0.01	-0.39	-1.36	-0.12	-1.60
Idealized Relationship	0.68	-0.92	0.44	-1.31	0.65	-1.16
Dedicated Patient	-0.72	-0.25	-0.20	-1.03	-0.26	-1.19

Note: * indicates scale has significant skewness at $\alpha = .01$

Multicollinearity. The data were screened for multicollinearity by examining an intercorrelation matrix for all dependent variables (see Table 10). Several variables were strongly intercorrelated, as expected in a repeated measures design, and given that the dependent variables are subscales of the same measure and are conceptually related. However, all correlation coefficients were less than $r = .90$ and it was determined that the data are not multicollinear.

Homogeneity of variance-covariance. Because the groups were similar in size, homogeneity of variance is unlikely to be problematic, but examination of Box's M confirms that all variables are within acceptable limits (Box's M = 281.97; $F(120, 3352) = 1.17$; $p = .11$). Values for Levene's test for equality of variances were also examined to test for homogeneity of error variances, and all values were non-significant indicating that equal variances can be assumed.

Table 10

Intercorrelations of CAS Subscales at Months 1, 6, and 12

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. CC 1	--													
2. CC 6	0.68 ***	--												
3. CC 12	0.49 **	0.49 ***	--											
4. GT 1	0.87 ***	0.52 ***	0.43 **	--										
5. GT 6	0.68 ***	0.72 ***	0.49 ***	0.72 ***	--									
6. GT 12	0.42 **	0.49 ***	0.64 ***	0.44 **	0.46 **	--								
7. BS 1	0.77 ***	0.59 ***	0.44 **	0.81 ***	0.64 ***	0.30	--							
8. BS 6	0.52 ***	0.73 ***	0.46 **	0.53 ***	0.85 ***	0.48 **	0.63 ***	--						
9. BS 12	0.39 **	0.39 **	0.64 ***	0.45 **	0.47 **	0.75 ***	0.44 **	0.55 ***	--					
10. IR 1	0.50 ***	0.26	0.24	0.50 ***	0.33 *	0.34 *	0.30 *	0.24	0.34 *	--				
11. IR 6	0.33 *	0.31 *	0.28	0.18	0.41 **	0.23	0.18	0.32 *	0.28	0.18	--			
12. IR 12	0.06	0.17	0.26	0.01	0.12	0.19	-0.05	-0.02	0.01	0.07	0.50 **	--		
13. DP 1	0.52 ***	0.27	0.30	0.60 ***	0.40 **	0.19	0.41 **	0.27	0.27	0.70 ***	0.15	-0.07	--	
14. DP 6	0.23	0.42 **	0.39 *	0.11	0.46 **	0.29	0.02	0.34 *	0.24	0.03	0.47 ***	0.28	0.07	--
15. DP 12	0.20	0.14	0.53 ***	0.20	0.16	0.41 **	0.11	0.14	0.46 **	0.26	0.42 **	0.58 ***	0.30	0.44 **

Results of doubly multivariate analysis of variance.

Test of flatness. The test of flatness tests the main effect of time (month of measurement). The test collapses across the two client groups and examines the sample as a whole to detect significant changes in each CAS subscale across time. The test of flatness was significant and had a large effect size ($p = .03$, $\eta^2 = 0.54$; see Table 11), indicating significant change in alliance ratings by time on at least one CAS subscale. Univariate tests and within-subjects contrasts for the main effect of month were examined to determine which specific subscales at which particular timepoints contributed to the significant main effect. The Bond Scale was the only CAS subscale to reach significance in the univariate analyses ($p < .001$; $\eta^2 = 0.22$). The Bond Scale had a significant contrast from month 1 ($M = 25.98$) to month 6 ($M = 28.96$), $F(1, 33) = 13.40$, $p = .001$, $\eta^2 = .29$ indicating significant improvement in the emotional bond in the first half of the year. The scale continued to increase until month 12, but that increase was not statistically significant (see Figure 8).

Table 11

Doubly Multivariate Analysis of Variance Comparing Alliance Ratings by Improvement Status

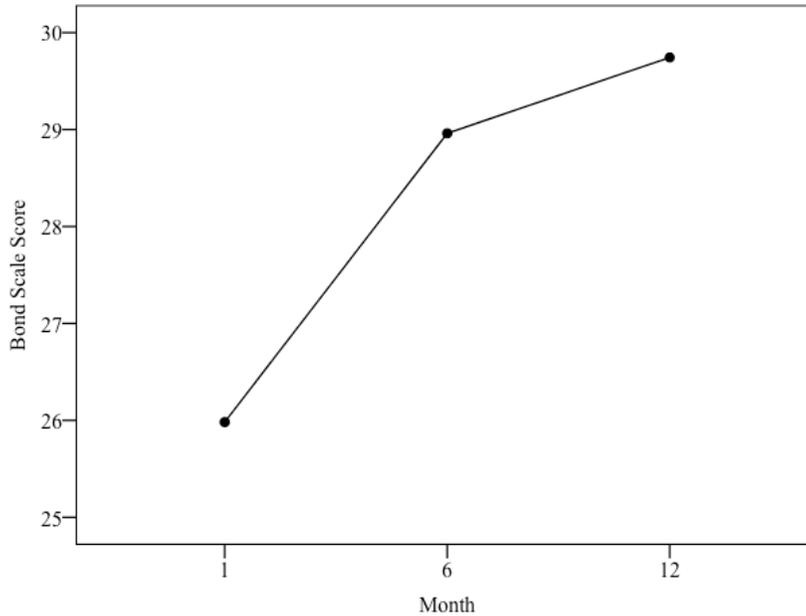
Variable	Multivariate	Univariate				
	F	CC	GT	BS	IR	DP
Month ^{a,c}	2.85 *	2.29	0.51	9.27 ***	0.18	2.61
Improvement ^{b,d}	0.58	0.09	0.83	0.43	0.23	0.05
Month x Improvement ^{a,c}	1.64	2.08	6.12 **	1.15	1.22	0.83

Note. ^a Multivariate $df = (10, 24)$. ^b Multivariate $df = (5, 29)$. ^c Univariate $df = (2, 66)$. ^d

Univariate $df = (2, 28)$. Test of flatness results are found in the Multivariate column, in the “month” row. Test of levels results are found in the Multivariate column, in the “improvement” row. Test of parallelism results are found in the Multivariate column, in the Month x Interaction row. CC = Confident Collaboration; GT = Agreement on Goals and Tasks; BS = Bond Scale; IR = Idealized Relationship; DP = Dedicated Patient

* $p < .05$; ** $p < .01$; *** $p < .001$

Figure 8

Graph of Bond Scale Scores by Time

Test of levels. The test of levels tests the main effect of group. The test examines whether there is a difference in the overall quality of alliance between clients who did and did not significantly improve in treatment. It was hypothesized that clients who showed significant improvement on outcome measures at the end of the year would have overall higher ratings on alliance scales. The test of levels was non-significant, indicating that there are no reliable differences between groups on alliance ratings averaged across CAS subscales (see table 11).

Test of parallelism. The test of parallelism tests the interaction effect of group membership by time. The analysis compares the patterns of alliance ratings across time for clients who significantly improved on outcome measures and clients with non-significant change. Results of the doubly multivariate analysis of variance indicate that the test of parallelism was non-significant (see Table 11). There was no significant interaction effect of group by time,

indicating that the profiles of CAS subscale ratings of clients who did and did not improve on outcome measures are essentially parallel across time.

Summary of results from doubly multivariate analysis. There was a significant main effect for time, indicating that the CAS scores, collapsed across groups, changed significantly across the three measurement periods. Contrasts indicate that the significant effect of time was due to changes in alliance ratings from month 1 to month 6 on the Bond Scale. There were no significant changes in any CAS subscale ratings from month 6 to month 12. Contrary to predictions, there was no significant main effect for group (no difference between treatment responders and non-responders in their CAS subscale scores), and no interaction effect for group by time (treatment responders and non-responders did not have a different pattern of change in CAS subscales by time).

DISCUSSION

Meta-analytical studies have supported a significant, positive relationship between the quality of the therapeutic alliance and treatment outcomes (Hilsenroth et al., 2004; Horvath & Symonds, 1991; Martin et al., 2000). In cognitive-behavioral therapies, it has been suggested that the role of the alliance is to provide an environment of trusting collaboration within which therapeutic strategies can be delivered and new learning can occur (Swales & Heard, 2007). The alliance is considered to be primarily a facilitating factor in therapy, rather than a central agent of change. Dialectical Behavior Therapy is relatively unique among cognitive-behavioral approaches in its conceptualization on the therapeutic alliance and in the amount of focus it places on the development and maintenance of the alliance. While the alliance is not considered to be inherently healing in DBT, it is recognized as an essential precondition for retaining clients in treatment and establishing the trust, respect, and caring necessary for the therapist and client to be able to work together in a long-term therapy that focuses on changing very challenging and high-risk behaviors. In DBT, the relationship is also conceptualized as a “real” relationship, and the transactional nature of the therapist-client relationship is emphasized, including the possibility that the relationship can lead to transformation in both the therapist and client through their mutual influence and shared experiences across time in therapy.

The structure and theory of DBT emphasize alliance-enhancing elements such as validation, empathy, genuineness, and a direct focus on repairing problems in the alliance before they further disrupt the treatment. While there have been theoretical essays addressing the role of the therapeutic relationship in DBT (Robins & Koons, 2000; Swales & Heard, 2007), there is a lack of empirical data about the quality of the alliance in DBT and how the alliance may change across time in this long-term treatment approach. The present study provided preliminary data about treatment outcomes and characteristics of the therapeutic alliance in a comprehensive, outpatient DBT program in a naturalistic setting.

Comorbidity and Sample Characteristics

Given that this study used a naturalistic sample from a community mental health practice, there were high rates of comorbidity. The sample had a median of two Axis I diagnoses and one Axis II diagnosis per client. On Axis I, the most frequent diagnoses were Major Depressive Disorder, Panic Disorder, Generalized Anxiety Disorder, Bipolar Disorder and Posttraumatic Stress Disorder. On Axis II, 72% of the sample was diagnosed with Borderline Personality Disorder, and common comorbid conditions on Axis II were Avoidant Personality Disorder, Obsessive-Compulsive Personality Disorder, Dependent Personality Disorder, and Paranoid Personality Disorder. The high degree of comorbidity is both a strength and a weakness of the study. A benefit of the naturalistic design in present study is that the external validity of the results is increased by the use of a clinical sample that is more representative of individuals presenting for treatment in the community than the samples used in randomized clinical trials of DBT, most of which had at least some exclusion criteria that limited comorbidity in the sample. For example, one of the most common exclusion criteria in the RCTs was a diagnosis of bipolar disorder, which was a common diagnosis in the present sample (22%). Given the overlap between BPD and bipolar disorder in some broad symptom domains such as impulsivity, irritability and emotional lability, it is likely that the skills and techniques implemented in DBT would also be relevant for the treatment of clients with a primary or comorbid diagnosis of bipolar disorder, and the effectiveness of standard DBT for clients with this diagnosis is a relevant clinical question. While RCTs provide greater control and specificity in research design, the results of studies in a naturalistic setting may be more relevant and applicable for clinicians practicing DBT in the community.

As a result of the naturalistic design, the present study does not provide data about the treatment of Borderline Personality Disorder specifically, but instead assesses treatment outcomes of DBT for a complex, multi-diagnostic population of chronically suicidal and self-harming adults. Comparisons of treatment outcomes for clients with and without a diagnosis of BPD in the present study may therefore be complicated by the high degree of comorbidity in this study.

Given that most clients in the DBT program were specifically referred for this treatment because of problems with emotion regulation, impulsivity, or suicidal and self-harming behaviors, there is likely a high degree of symptom overlap between clients with and without a formal diagnosis of BPD. In fact, there was a high rate of “BPD traits” in the non-BPD sample (60%), as defined by meeting several diagnostic criteria for the disorder on the SCID-II but not reaching the clinical cutoff for diagnosis. The comparisons of clients with and without Borderline Personality Disorder in the present study may more accurately be described as between-groups comparisons of clients diagnosed with BPD and those with a subclinical borderline presentation.

Client Improvement

Analyses of treatment outcomes in the DBT program suggest that the treatment was effective at reducing a range of psychiatric symptoms, and many clients had a positive response to treatment. The sample as a whole had statistically significant improvement on self-reported depression, hopelessness, and general psychiatric symptoms. The sample mean for the BDI-II fell into the “severe depression” range at intake, and by month twelve had improved to “moderate depression” based upon categories established in the BDI-II manual (Beck, Steer & Brown, 1996). While scores on the Beck Hopelessness Scale showed statistically significant change, both intake and month twelve values fell into the “moderate hopelessness” range as established by the BHS manual (Beck & Steer, 1993). The Brief Symptom Inventory does not provide categorical specifiers of severity for the Global Severity Index; however, the sample mean at intake was over half a standard deviation higher than the established norms for psychiatric outpatients ($M = 1.32$, $SD = .72$; Derogatis, 1993), and at month twelve the sample mean on the Global Severity Index was comparable to the general clinical population norms.

Clinical significance analysis was also used to classify each client’s change across time in treatment. Clinical significance analysis has several benefits over research designs using only statistical analyses to assess treatment outcomes. Traditional statistical significance analyses determine at a given probability level whether two groups are different from one another, but the results do not provide adequate information about the within-group variability, the proportion of

individuals in the groups who improved in treatment, or how meaningful the change is for individual clients' level of functioning and quality of life (Wise, 2004). In the present study, clinical significance analysis allowed for classification of clients based upon their degree of improvement in treatment, and subsequently, made it possible to compare clients who did and did not achieve significant improvement in therapy on other variables such as diagnoses and alliance quality. Using the reliable change index and return to normal functioning criteria, it was possible to identify that although many clients experienced improvement in symptoms, few crossed the cutoff into a "normal" level of functioning on the symptoms assessed in the present study. The results of the clinical significance analysis categorized nearly half (48.9%) of the sample as Improved or Recovered on at least one of the three outcome measures. The treatment appears to have been more effective for reduction of depressive symptoms (50% of the sample improved or recovered), than hopelessness and general psychiatric symptoms (18 and 34% respectively). Overall, the results indicate that DBT was effective for decreasing the severity of depression, hopelessness, and general psychiatric symptoms, but the majority of clients were still in the clinical range on these symptoms at the end of one year of DBT treatment.

In randomized controlled trials (Koons et al., 2001; Linehan et al., 1991; Verheul et al., 2003), DBT has been found most effective for decreasing frequency and medical risk of self-harm, days spent in psychiatric hospitals, and frequency of suicide attempts. Most studies have found less consistent and smaller magnitude change on symptoms such as depression, anxiety, hopelessness, and social adjustment. In the present study, data regarding clients' frequencies of self-harm, suicidal behaviors, and hospitalizations during the year of treatment were not available as outcome measures. However, a pilot study of treatment outcomes for the DBT program at the same mental health center analyzed the self-harming behaviors, urges to engage in self-harm, and suicidal ideation of a subset of the clients included in the present study (Johnson, Hayes, Russo & Kanter, 2005). This prior study found a significant reduction in self-harming behaviors in the first four months of treatment, and a smaller degree of improvement in suicidal ideation and urges to self-harm which did not reach statistical significance (Johnson et al., 2005). These findings, along

with the results of the present study, suggest that the patterns of clinical outcomes in the community DBT program are similar to the results of the randomized controlled trials for DBT, which tend to find rapid decreases in life-threatening behaviors, followed by lingering elevated levels of depression, hopelessness, anxiety, and general distress, which are slower to improve in treatment (e.g., Linehan et al., 1991; Verheul et al., 2003). Linehan (1993) conceptualized this phenomenon as a period of “quiet desperation” for the client. In DBT, self-harm and impulsive behaviors are believed to function as strategies for avoidance or numbing of painful emotions. When the client ceases to engage in these behaviors, he or she goes through a period of emotional exposure in which the emotional pain is still present but he or she must learn to cope with and tolerate the distress. The results of the present study seem consistent with Linehan’s conceptualization of “quiet desperation,” as many clients in the program had significant improvement, but were still reporting emotional distress and would likely need ongoing treatment of some kind at the end of Stage I DBT.

There were some limitations to the clinical significance analysis methodology, as applied in the present study. First, clinical significance analysis is problematic for assessing treatment outcomes of clients who enter therapy with mild symptoms. Approximately 29% of the clients in this sample were not classifiable by the clinical significance analyses due to entering therapy with minimal symptoms on one or more outcome measures (5 clients on the BDI-II, 11 clients on the BHS, and 3 clients on the BSI-Global Severity Index). For clients who were already below the clinical cutoff on a given measure at intake, a “return to normal functioning” criterion was irrelevant. Also, for clients who entered therapy with symptoms near the low end of the clinical range, it was not uncommon for the return to normal functioning criterion to be met without the magnitude of change being sufficient to meet the reliable change index criterion (e.g., a client could enter the healthy range for depressive symptoms with a change of only a few points on the BDI-II if he or she entered treatment with mild depression, but this degree of change is small and could be attributable to measurement error).

Likewise, the results of clinical significance analysis may need to be interpreted with caution when this methodology is applied to very severe clinical populations. Some theorists have suggested that for certain clinical settings and populations, a “return to normal” criterion may be overly stringent and unrealistic, and this methodology may obscure positive treatment outcomes, making the treatment appear less effective than it was (Wise, 2004). In particular, clients with personality disorders and other chronic mental illnesses may be unlikely to achieve a return to normal functioning, even when the treatment has been successful in improving the client’s functioning and quality of life, and meeting other key goals of the treatment. In the present clinical sample, and DBT treatment programs in general, many clients still report elevated psychiatric symptoms (e.g., depression, hopelessness) and are in need of ongoing treatment after a year of therapy. While this could be cited as evidence that DBT had limited efficacy, it is perhaps more likely that “recovery” by the Jacobson and Truax (1991) definition is not an accurate short-term goal or measure of treatment success for clients with personality disorders and patterns of chronic, severe psychiatric symptoms. It has been suggested that for clients with severe or chronic mental illness, a general outpatient clinical norm may provide a better proxy of “recovery,” as opposed to the norms from a healthy, non-patient population (Ogles et al., 2001). In the present sample, it is likely that for many of the clients, an improvement from severe symptoms to moderate symptoms (comparable to a general outpatient population) would be perceived as quite meaningful and significant.

An additional limitation of clinical significance analysis is that the results are highly dependent upon the psychometric properties of the instruments used. Due to the method of calculating the Reliable Change Index, outcome measures with higher standard error tend to yield results with fewer clients classified as significantly improved and a larger proportion of the sample classified as “unchanged” (Ankuta & Abeles, 1993). It is likely that this adversely affected the outcome of the clinical significance analysis for the Beck Hopelessness Scale in the present study. The BHS had poorer test-retest reliability (.69) than the BDI-II (0.93) and the BSI-Global Severity Index (0.90), and the low reliability value resulted in a higher value for the

standard error of measurement and a more stringent standard for clinically significant improvement. This effect is apparent in Figures 2 through 4, in which it is clear that the diagonal band of non-significant change values is broader for the BHS than for the BDI-II and BSI-Global Severity Index, and as a result, fewer clients were classified as improved on the BHS. It is unclear whether the results of the clinical significance analysis for the BHS accurately reflect a low frequency of improvement in the study sample, or whether the use of a different measure of suicidal ideation and hopelessness would yield different results.

The outcomes of clinical significance analyses are dependent not only on the psychometric properties of the measures used, but also on how the researcher or clinician chooses to define relevant change in treatment. For example, in the case of the “quiet desperation” phenomenon, clients may experience a remission in self harming behaviors, but continue to experience emotional distress. If the outcome measure used in the clinical significance analysis were based on behavioral data such as frequency of self-harm, the treatment would appear successful and many clients would likely achieve clinically significant change; however, if the outcome measure were a self-report scale for hopelessness and suicidal ideation, as in the present study, many clients would likely be categorized as “unchanged.” It is important to consider whether such a result would be perceived as meaningful and significant to the clinician, the client, and significant others in the client’s life (Rizvi, 2011). The definition of significant change has an element of subjectivity that makes conclusions about treatment outcomes complex.

The Therapeutic Alliance in DBT

Despite the popular opinion among mental health professionals that the therapeutic alliance is difficult to establish and maintain with individuals with Borderline Personality Disorder, clients in this sample reported very positive relationships with their therapists and the overall quality of the alliance did not differ between clients who did and did not have a diagnosis of BPD. The global, positive reports of alliance quality suggest an optimistic view of the capacity of clients to develop strong relationships with their therapists in DBT.

It was predicted that clients in this study would show significant month-to-month variability in their ratings of alliance quality. The literature on therapeutic alliance is divided on the question of how alliance changes and develops across time. Many studies suggest that the alliance is established early in treatment and remains relatively stable across the remainder of the treatment (Hilsenroth et al., 2004; Luborsky et al., 1983). Consistent with this conceptualization of alliance development, the slope of alliance change across time appeared very flat and stable when global means (i.e., averaged across the whole clinical sample) for the alliance ratings were examined in the present study. However, it has been suggested that the use of aggregate means for alliance ratings averages out individual variability and may lead to the conclusion that alliance is more stable than is actually the case for most individual clients (Horvath & Symonds, 1991; Safran & Muran, 2000). Similarly to the rationale for clinical significance analysis in therapy outcome evaluation, it seems that for analysis of the therapeutic alliance it is also important not only to assess significant change in group means across time, but also to examine patterns of change in individual clients and to note clinically meaningful patterns.

When individual clients' patterns of alliance across time were examined, it became clear that many clients in the sample had significant variability in alliance quality. It appears that a subset of clients may experience relatively stable alliance across time, but for other clients, models of rupture and repair in alliance (e.g., Safran et al., 1990) may be more fitting. Over half of the sample in the present study experienced precipitous changes in the alliance from one month to the next, most frequently on the subscales measuring the quality of the emotional bond and clients' constructive engagement in therapy (as opposed to engagement in behaviors that impede or interfere with treatment). While there was no significant difference between clients with and without a diagnosis of BPD in the overall quality of the alliance, clients with BPD had more frequent, dramatic shifts in alliance than clients without the diagnosis, and were especially likely to show a pattern of variability in the emotional bond and confidence that their work in therapy would lead to positive outcomes.

Monthly assessment of alliance quality across the year of DBT provided a good estimate of the pattern of alliance development across time. However, it is likely that even with monthly measurements, a great deal of information about the ongoing relational process between therapist and client was missed. Especially in treatment with clients who struggle with interpersonal relationships and emotion dysregulation, it is possible that there are multiple “micro” rupture and repair sequences within each session that would not be detected on the alliance measures used in the present study. In fact, if an alliance rupture occurred within a session and was immediately addressed and repaired, the post-session rating of alliance may not indicate that there had been a problem at all. The changes detected by the monthly alliance ratings are more likely to reflect unresolved ruptures in the alliance that may linger between sessions over a period of time. This is an example of a situation in which it would be helpful for the therapist to be aware of a client’s alliance ratings, as it may be indicative of a problem in the therapeutic relationship that needs to be further addressed in session (e.g., therapy interfering behavior of the client and/or therapist that may be creating or maintaining a problem in the working relationship). For a finer grained analysis of shifts in the therapeutic alliance, several brief measurements have been developed for administration immediately after each session, in order to provide immediate feedback on the client’s perception of the alliance and process in the session (e.g., Session Feedback Measure: Thomas, 2008; Session Rating Scale: Duncan et al., 2003). In future research and clinical practice, the use of such measures immediately after each session is likely to provide greater detail about therapist behaviors in session that hurt or enhance the alliance, and processes that lead to repair of problems that occur in the alliance.

Alliance and outcome in DBT. In this study, it was hypothesized that clients who improved significantly in therapy would report higher alliance quality than those who did not significantly improve on the outcome measures, but this hypothesis was not supported. There was no significant relationship between alliance quality and treatment outcomes in the DBT program. Also, the patterns of change in alliance across time did not differ for clients who did and did not achieve clinically significant improvement in therapy. The only significant finding of the doubly

multivariate analysis was the main effect of time, with the Bond Scale showing significant improvement from intake to month six of treatment, followed by continued non-significant improvement until month twelve. This may support the idea that a healthy therapeutic alliance is important for the success of DBT, but is not a primary mechanism of change (Linehan, 1988; Swales & Heard, 2007). Whereas alliance has been consistently found to be a predictor of treatment outcome in general psychotherapy (e.g., Hilsenroth et al., 2004), it appears that this is not the case for DBT. One potential reason for this discrepancy is that meta-analyses of the relationship between alliance and treatment outcome have typically used clinical samples that are heterogeneous in client diagnoses, severity of pathology, and therapeutic model or theoretical orientation of the treatment. It is likely that the majority of the client-therapist dyads in these studies engaged in a form of treatment that is more supportive or humanistic in nature, as opposed to the more highly structured protocol of DBT. In DBT, it is likely that the therapeutic alliance is at times necessary for client retention and collaboration in treatment, but is not sufficient for therapeutic change with the typical clients who have chronic and severe psychiatric symptoms.

Limitations of the Present Study

Similarly to much of the previous research on DBT outcomes, the sample in the present study was fairly demographically homogeneous, with too few men and individuals from racial and ethnic minorities to allow between-groups comparisons. This has been a significant weakness in previous research on DBT outcomes as well, as many of the RCTs were conducted using only women. BPD is more commonly diagnosed in women (approximately 75%; Widiger & Weissman, 1991), but further research is needed to determine whether men and women with BPD differ in their clinical presentation or response to treatment. Also, in the majority of previous studies of DBT's efficacy, the participants were predominantly Caucasian. It is unclear whether the lack of racial diversity in efficacy studies accurately reflects the typical demographics of individuals with BPD, or whether this is a problem of research design, unrepresentative sampling, or potentially reflective of a self-selection bias in the demographics of individuals who seek treatment or volunteer for treatment studies for BPD. Regardless of the reasons for the lack of

diversity in research samples, it is clear that there is a need for future research investigating DBT's efficacy across a broader range of client characteristics, including racial, ethnic and cultural background, nationality, gender, and sexual orientation, in order to better represent the diversity of clients presenting for therapeutic services in the community.

Like many previous clinical studies of DBT, the present study had a relatively small sample size, which limited the options for statistical analyses and level of detail possible in these analyses. Due to the limitations of the sample size, it was only possible to use three of the twelve available assessment timepoints (months 1, 6, and 12) in the analyses of the relationship between alliance and outcome in therapy. Although the inclusion of more timepoints would have provided a more detailed view of the changes in alliance across time in therapy, this also would have greatly reduced the power of the analyses and led to a violation of assumptions for sample size for doubly multivariate analysis. The sample size was also insufficient for other common repeated measures analyses such as hierarchical linear modeling and structural equation modeling. In future research, a larger clinical sample would allow for a broader range of outcome analyses and provide increased statistical power.

There were also several methodological limitations in the design of the present study that may affect the conclusions that can be drawn from the results on clinical outcomes. First, there was no control condition, so the outcomes of the DBT program cannot be compared to other available forms of treatment for this population. Also, the present study did not use any form of session monitoring for adherence to a DBT treatment frame. It is believed that all clients in the sample received reasonably adherent DBT, given the high level of skill and training in DBT attained by the therapists in the center, and participation in ongoing supervision, continued education, and consultation team meetings. However, coding of sessions for adherence to DBT would further ensure that the treatment was effectively delivered, and strengthen the conclusions that can be drawn about the effectiveness of DBT as provided in a naturalistic, private practice setting in the community.

Another limitation of the present study was the lack of an “intent-to-treat” design. Only clients who remained in treatment and continued participation in monthly data collection for one full year were included in the analyses. This design did not allow for analysis of treatment dropout rates in the DBT program, and may have positively biased the analyses. For example, it is possible that the lack of an intent-to-treat design contributed to the significant negative skew in several subscales of the Combined Alliance Scale, as clients with poorer alliance quality have been found to be more likely to prematurely drop out of treatment (Cournoyer, Brochu, Landry & Bergeron, 2007), and thus including only clients who completed the year of treatment may provide a positive bias for ratings of the therapeutic alliance. Given this caveat, it is unclear whether the ceiling effect on the Combined Alliance Scale reflects a study design limitation, a psychometric problem with the measure for this particular population, a positive response bias among these clients, or if it in fact reflects genuinely positive views of the alliance by the clients in the DBT program.

Finally, it was not possible to determine which specific elements of DBT may have contributed to the formation and maintenance of a positive alliance, or whether the patterns of alliance development would differ in a control condition using a different modality of treatment with a similar clinical population. Dismantling research is necessary to identify the “active ingredients” of DBT (Bornovalova & Daughters, 2007; Linehan et al., 2006; Lynch et al., 2006; Scheel, 2000). It is likely that in conjunction with dismantling research assessing the contribution of various elements of DBT to positive treatment outcomes, there will be opportunities to identify which components of the treatment contribute most to the therapeutic alliance as well. Qualitative methods such as periodic interviews about alliance quality throughout treatment may also provide richer detail and clarify clients’ perceptions of what specific elements of their therapy they find most helpful and most conducive to a positive relationship with their therapists. Also, given that many clients in DBT have extensive histories of previous treatment in other treatment modalities, it would be informative to interview clients about differences they perceive, if any, in the quality of the alliance with their DBT therapists compared to previous therapists.

BIBLIOGRAPHY

- Ackerman, S. J., Hilsenroth, M. J., Baity, M. R. & Blagys, M. D. (2000). Interaction of therapeutic process and alliance during psychological assessment. *Journal of Personality Assessment, 75*(1), 82-109.
- Alexander, L. B. & Luborsky, L. (1986). The Penn helping alliance scales. In L. Greenberg & W. Pinsof (Eds.), *The psychotherapeutic process: A research handbook* (pp. 325-366).
- American Psychiatric Association (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.). Washington, DC: Author.
- American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text revision). Washington, DC: Author.
- American Psychiatric Association (2001). Practice guideline for the treatment of patients with borderline personality disorder. *The American Journal of Psychiatry, 158*(10), 2-52.
- Ankuta, G. Y. & Abeles, N. (1993). Client satisfaction, clinical significance, and meaningful change in psychotherapy. *Professional Psychology: Research and Practice, 24*(1), 70-74.
- Bachelor, A. & Horvath, A. (1999). The therapeutic relationship. In M. A. Hubble, B. L. Duncan & S. D. Miller (Eds.), *The heart and soul of change: What works in therapy* (pp. 133-178). Washington, D.C.: American Psychological Association.
- Barley, W. D., Buie, S. E., Peterson, E. W., Hollingsworth, A. S., Griva, M., Hickerson, S. C., Lawson, J. E. & Bailey, B. J. (1993). Development of an inpatient cognitive-behavioral treatment program for borderline personality disorder. *Journal of Personality Disorders, 7*(3), 232-240.
- Barlow, D. H. (1981). On the clinical research to clinical practice: Current issues, new directions. *Journal of Consulting and Clinical Psychology, 49*, 147-155.
- Basco, M. R., Bostic, J. Q., Davies, D., Rush, A. J., Witte, B., Hendrickse, W. & Barnett, V. (2000). Methods to improve diagnostic accuracy in a community mental health setting. *American Journal of Psychiatry, 157*, 1599-1605.
- Bateman, A. & Fonagy, P. (1999). Effectiveness of partial hospitalization in the treatment of borderline personality disorder: A randomized controlled trial. *American Journal of Psychiatry, 156*(10), 1563-1569.
- Beck, A. T. & Steer, R. A. (1988). *Manual for the Beck hopelessness scale*. San Antonio, TX: The Psychological Corporation.
- Beck, A. T. & Steer, R. A. (1993). *Beck hopelessness scale*. San Antonio, TX: The Psychological Corporation.
- Beck, A. T., Steer, R. A. & Brown, G. K. (1996). *Beck depression inventory: Second edition manual*. San Antonio, TX: The Psychological Corporation, Harcourt Brace & Company.
- Beck, A. T., Weissman, A., Lester, D. & Trexler, L. (1974). The measurement of pessimism: The hopelessness scale. *Journal of Consulting and Clinical Psychology, 42*(6), 861-865.

- Ben-Porath, D. (2004a). Intersession telephone contact with individuals diagnosed with borderline personality disorder: Lessons learned from dialectical behavior therapy. *Cognitive and Behavioral Practice, 11*, 222-230.
- Ben-Porath, D. D. (2004b). Strategies for securing commitment to treatment from individuals diagnosed with borderline personality disorder. *Journal of Contemporary Psychotherapy, 34*(3), 247-263.
- Bender, D. S. (2005). The therapeutic alliance in the treatment of personality disorders. *Journal of Psychiatric Practice, 11*, 73-87.
- Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N.D., Carmody, J., Segal, Z. V., Abbey, S., Specca, M., Velting, D. & Devins, G. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science and Practice, 11*, 230-241.
- Blennerhassett, R. C. & O'Raghallaigh, J. W. (2005). Dialectical behaviour therapy in the treatment of borderline personality disorder. *British Journal of Psychiatry, 186*, 278-280.
- Bohus, M., Haaf, B., Simms, T., Limberger, M. F., Schmahl, C., Unckel, C., Lieb, K. & Linehan, M. (2004). Effectiveness of inpatient dialectical behavioral therapy for borderline personality disorder: A controlled trial. *Behaviour Research and Therapy, 42*, 487-499.
- Bohus, M., Haaf, B., Stiglmayr, C., Pohl, U., Bohme, R. & Linehan, M. (2000). Evaluation of inpatient dialectical-behavioral therapy for borderline personality disorder: A prospective study. *Behaviour Research and Therapy, 38*, 875-887.
- Bordin, E. S. (1979). The generalizability of the psychoanalytic concept of the working alliance. *Psychotherapy: Theory, Research, and Practice, 16*, 252-260.
- Bornoalova, M. A. & Daughters, S. B. (2007). How does dialectical behavior therapy facilitate treatment retention among individuals with comorbid borderline personality disorder and substance use disorders? *Clinical Psychology Review, 27*, 923-943.
- Clarkin, J. F., Levy, K. N., Lenzenweger, M. F. & Kernberg, O. F. (2007). Evaluating three treatments for borderline personality disorder: A multiwave study. *The American Journal of Psychiatry, 164*(6), 922-928.
- Clemence, A. J., Hilsenroth, M. J., Ackerman, S. J., Strassle, C. G. & Handler, L. (2005). Facets of the therapeutic alliance and perceived progress in psychotherapy: Relationship between patient and therapist perspectives. *Clinical Psychology and Psychotherapy, 12*, 443-454.
- Cohen, J. W. (1988). *Statistical power analysis for the behavioral sciences* (2nd edn). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Cournoyer, L. G., Brochu, S., Landry, M. & Bergeron, J. (2007). Therapeutic alliance, patient behaviour and dropout in a drug rehabilitation programme: The moderating effect of clinical subpopulations. *Addiction, 102*, 1960-1970.
- Crits-Christoph, P. (1998). Psychosocial treatments for personality disorders. In P. E. Nathan & J. M. Gorman (Eds.), *A guide to treatments that work* (pp. 544-553). New York: Oxford University Press.

- Crowell, S. E., Beauchaine, T. P. & Linehan, M. M. (2009). A biosocial developmental model of borderline personality: Elaborating and extending Linehan's theory. *Psychological Bulletin*, 135(3), 495-510.
- Cutrona, C. E. & Russell, D. (1987). The provisions of social relationships and adaptation to stress. In W. H. Jones & D. Perlman (Eds.), *Advances in Personal Relationships*, (Vol. 1, pp. 37-67). Greenwich, CT: JAI Press.
- Derogatis, L. R. (1975). *Brief symptom inventory*. Baltimore, MD: Clinical Psychometric Research.
- Derogatis, L. R. (1993). *BSI brief symptom inventory: Administration, scoring, and procedures manual (4th Ed.)*. Minneapolis, MN: National Computer Systems.
- Derogatis, L. & Melisaratos, N. (1983). The brief symptom inventory: An introductory report. *Psychological Medicine*, 13, 595-605.
- Dimeff, L. & Linehan, M. M. (2001). Dialectical behavior therapy in a nutshell. *The California Psychologist*, 34, 10-13.
- Dimeff, L., Rizvi, S. L., Brown, M. & Linehan, M. M. (2000). Dialectical behavior therapy for substance abuse: A pilot application to methamphetamine-dependent women with borderline personality disorder. *Cognitive and Behavioral Practice*, 7, 457-468.
- Duncan, B. L., Miller, S. D., Sparks, J. A., Claud, D. A., Reynolds, L. R., Brown, J. & Johnson, L. D. (2003). The session rating scale: Preliminary psychometric properties of a "working" alliance measure. *Journal of Brief Therapy*, 3, 3-12.
- Evans, M. O., Morgan, H. G., Hayward, A. & Gunnell, D. J. (1999). Crisis telephone consultation for deliberate self-harm patients: Effects on repetition. *British Journal of Psychiatry*, 175, 23-27.
- Feigenbaum, J. (2007). Dialectical behaviour therapy: An increasing evidence base. *Journal of Mental Health*, 16(1), 51-68.
- Fogelson, D. L., Nuechterlein, K. H., Asarnow, R. F., Subotnik, K. & Talovic, S. A. (1991). Interrater reliability of the structured clinical interview for DSM-III-R, axis II: Schizophrenia spectrum and affective spectrum disorders. *Psychiatry Research*, 39, 55-63.
- Fraser, J. S. & Solovey, A. D. (2007). Self-harming and suicidal clients. In *Second-order change in psychotherapy: The golden thread that unifies effective treatments*. Washington, DC: American Psychological Association, pp. 245-270.
- Freud, S. (1958). On beginning the treatment. In J. Strachey (Ed. and Trans.), *The standard edition of the complete psychological works of Sigmund Freud* (Vol. 12, pp.112-144). London: Hogarth. (Original work published 1913).
- Frieswyk, S. H., Gabbard, G. O., Horwitz, L., Allen, J. G., Colson, D. B., Newsom, G. E., & Coyne, L. (1994). The role of the therapeutic alliance in psychoanalytic therapy with borderline patients. In A. O. Horvath and L. S. Greenberg (Eds.), *The working alliance: Theory, research, and practice* (pp. 199-224). New York: John Wiley.

- Fruzzetti, A. E., Shenk, C. & Hoffman, P. D. (2005). Family interaction and the development of borderline personality disorder. *Development and Psychopathology*, 17, 1007-1030.
- Gabbard, G. O. (1993). An overview of countertransference with borderline patients. *Journal of Psychotherapy Practice and Research*, 2(1), 7-18.
- Gaston, L. (1991). Reliability and criterion-related validity of the California Psychotherapy Alliance Scales-patient version. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, 3(1), 68-74.
- Gaston, L., Piper, W. E., Debbane, E. G., Bienvenu, J. P. & Garant, J. (1994). Alliance and technique for predicting outcome in short and long term psychotherapy. *Psychotherapy Research*, 4, 121-135.
- Gelso, C. J. & Carter, J. A. (1994). Components of the psychotherapy relationship: Their interaction and unfolding during treatment. *Journal of Counseling Psychology*, 41(3), 296-306.
- Greenson, R. R. (1965). The working alliance and the transference neuroses. *Psychoanalysis Quarterly*, 34, 155-181.
- Gunderson (1996). The borderline patient's intolerance of aloneness: Insecure attachments and therapist availability. *American Journal of Psychiatry*, 164, 1637-1640.
- Harned, M. S. & Linehan, M. M. (2008). Integrating dialectical behavior therapy and prolonged exposure to treat co-occurring borderline personality disorder and PTSD: Two case studies. *Cognitive and Behavioral Practice*, 15, 263-276.
- Hatcher, R. L. & Barends, A. W. (1996). Patients' view of the alliance in psychotherapy: Exploratory factor analysis of three alliance measures. *Journal of Consulting and Clinical Psychology*, 64(6), 1326-1336.
- Hatcher, R. L., Barends, A., Hansell, J. & Gutfreund, M. J. (1995). Patients' and therapists' shared and unique views of the therapeutic alliance: An investigation using confirmatory factor analysis in a nested design. *Journal of Consulting and Clinical Psychology*, 63(4), 636-643.
- Heard, H. L. & Linehan, M. M. (1994). Dialectical behavior therapy: An integrative approach to the treatment of borderline personality disorder. *Journal of Psychotherapy Integration*, 4, 55-82.
- Henry, W. P., Schacht, T. E. & Strupp, H. H. (1990). Patient and therapist introject, interpersonal process, and differential psychotherapy outcome. *Journal of Consulting and Clinical Psychology*, 58, 768-774.
- Hilsenroth, M. J., Peters, E. J. & Ackerman, S. J. (2004). The development of therapeutic alliance during psychological assessment: Patient and therapist perspectives across treatment. *Journal of Personality Assessment*, 83(3), 332-344.
- Horvath, A. O. & Greenberg, L.S. (1989). Development and validation of the Working Alliance Inventory. *Journal of Counseling Psychology*, 36(2), 223-233.
- Horvath, A. O. & Symonds, B. D. (1991). Relation between working alliance and outcome in psychotherapy: A meta-analysis. *Journal of Counseling Psychology*, 38, 139-149.

- Hsu, L. M. (1996). On the identification of clinically significant client changes: Reinterpretation of Jacobson's cut scores. *Journal of Psychopathology and Behavioral Assessment, 18*, 371-385.
- Jacobson, N. S. & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology, 59*, 12-19.
- Johnson, J. M., Hayes, B. B., Russo, J. C. & Kanter, J. W. (2005, November). *A preliminary evaluation of dialectical behavior therapy in a naturalistic setting*. Poster presented at the meeting of the Association of Behavioral and Cognitive Therapy, Washington D.C.
- Katz, L. Y., Cox, B. J., Gunasekara, S. & Miller, A. L. (2004). Feasibility of dialectical behavior therapy for suicidal adolescent inpatients. *Journal of the American Academy of Child and Adolescent Psychiatry, 43*(3), 276-282.
- Kazdin, A. E. (1999). The meanings and measurement of clinical significance. *Journal of Consulting and Clinical Psychology, 67*(3), 332-339.
- Kazdin, A. E. & Wilson, G. T. (1978). Criteria for evaluating psychotherapy. *Archives of General Psychiatry, 35*, 407-416.
- Kernberg, O. (1976). Technical considerations in the treatment of borderline personality organization. *Journal of the American Psychoanalytic Association, 24*, 795-829.
- Kivlighan, D. M., Patton, M. J. & Foote, D. (1998). Moderating effects of client attachment on the counselor experience: Working alliance relationship. *Journal of Counseling Psychology, 45*, 274-278.
- Kivlighan, D. M. & Shaughnessy, P. (2000). Patterns of working alliance development: A typology of clients' working alliance ratings. *Journal of Counseling Psychology, 47*, 362-371.
- Klein, D. N., Schwartz, J. E., Santiago, N.J., Vocisano, C., Castonguay, L. G., Arnow, B., Blalock, J. A., Manber, R., Markowitz, J. C., Riso, L. P., Rothbaum, B., McCullough, J. P., Thase, M. E., Borian, F. E., Miller, I. W. & Keller, M. B. (2003). Therapeutic alliance in depression treatment: Controlling for prior change and patient characteristics. *Journal of Consulting and Clinical Psychology, 71*(6), 997-1006.
- Knight, R. (1953). Borderline states. *Bulletin of the Menninger Clinic, 17*, 1-12.
- Koerner, K. & Linehan, M. M. (1997). Case formulation in dialectical behavior therapy for borderline personality disorder. In E. Eells (Ed.), *Handbook of Psychotherapy Case Formulation*. New York: Guilford Press, pp. 340-367.
- Koons, C. R., Robins, C. J., Tweed, J. L., Lynch, T. R., Gonzalez, A. M., Morse, J. Q., Bishop, G. K., Butterfield, M. I. & Bastian, L. A. (2001). Efficacy of dialectical behavior therapy in women veterans with borderline personality disorder. *Behavior Therapy, 32*, 371-390.
- Lenzenweger, M. F. & Cicchetti, D. (2005). Toward a developmental psychopathology approach to borderline personality disorder. *Development and Psychopathology, 17*, 893-898.
- Linehan, M. M. (1987a). Dialectical behavior therapy: A cognitive behavioral approach to parasuicide. *Journal of Personality Disorders, 1*, 328-333.

- Linehan, M. M. (1987b). Dialectical behavior therapy for borderline personality disorder: Theory and method. *Bulletin of the Menninger Clinic*, 51, 261-276.
- Linehan, M. M. (1988). Perspectives on the interpersonal relationship in behavior therapy. *Journal of Integrative and Eclectic Psychotherapy*, 7(3), 278-290.
- Linehan, M. M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. New York: The Guilford Press.
- Linehan, M. M. (1994). Acceptance and change: The central dialectic in psychotherapy. In S.C. Hayes, N. S. Jacobson, V. M. Follette, & M. J. Dougher (Eds.), *Acceptance and change: Content and context in psychotherapy*. Reno, NV: Context Press.
- Linehan, M. M. (1997). Validation and psychotherapy. In A. Bohart & L. Greenberg (Eds.), *Empathy Reconsidered: New Directions in Psychotherapy*. Washington, DC: APA.
- Linehan, M. M., Armstrong, H. E., Suarez, A., Allmon, D. & Heard, H. H. (1991). Cognitive-behavioral treatment of chronically parasuicidal borderline patients. *Archives of General Psychiatry*, 48, 1060-1064.
- Linehan, M. M., Cochran, B. N., Mar, C. M., Levensky, E. R. & Comtois, K. A. (2000). Therapeutic burnout among borderline personality disordered clients and their therapists: Development and evaluation of two adaptations of the Maslach Burnout Inventory. *Cognitive and Behavioral Practice*, 7, 329-337.
- Linehan, M. M., Comtois, K. A., Murray, A. M., Brown, M. Z., Gallop, R. J., Heard, H. L., Korslund, K. E., Tutek, D. A., Reynolds, S. K. & Lindenboim, M. S. (2006). Two-year randomized controlled trial and follow-up of dialectical behavior therapy vs therapy by experts for suicidal behaviors and borderline personality disorder. *Archives of General Psychiatry*, 63, 757-766.
- Linehan, M. M., Dimeff, L. A., Reynolds, S. K., Comtois, K. A., Welch, S. S., Heagerty, P. & Kivlahan, D. R. (2002). Dialectical behavior therapy versus comprehensive validation therapy plus 12-step for the treatment of opioid dependent women meeting criteria for borderline personality disorder. *Drug and Alcohol Dependency*, 00, 1-14.
- Linehan, M. M. & Heard, H. L. (1993). Impact of treatment accessibility on clinical course of parasuicidal patients: Reply. *Archives of General Psychiatry*, 50, 157-158.
- Linehan, M. M., Heard, H. L. & Armstrong, H. E. (1993). Naturalistic follow-up of a behavioral treatment for chronically parasuicidal borderline patients. *Archives of General Psychiatry*, 50, 971-974.
- Linehan, M. M., Kanter, J. W. & Comtois, K. A. (1999). Dialectical behavior therapy for borderline personality disorder: Efficacy, specificity, and cost effectiveness. In D.S. Janowsky (Ed.), *Psychotherapy: Indications and outcomes* (pp. 93 - 120). Washington, DC: American Psychiatric Publishing.
- Linehan, M. M. & Schmidt, H. III (1995). The dialectics of effective treatment of borderline personality disorder. In W. O. O'Donohue & L. Krasner (Eds.), *Theories in Behavior Therapy*. Washington, D.C.: American Psychological Association, 553-584.

- Linehan, M. M., Tutek, D. A., Heard, H. L. & Armstrong, H. E. (1994). Interpersonal outcome of cognitive behavioral treatment for chronically suicidal borderline patients. *The American Journal of Psychiatry*, *151*, 1771-1776.
- Linehan, M. M., Wagner, A. W. & Tutek, D. (1990). *DBT Expert Rating Scale*. Seattle, WA: University of Washington.
- Lobbestael, J., Leurgans, M. & Arntz, A. (2010). Inter-rater reliability of the structured clinical interview for DSM-IV axis I disorders (SCID I) and axis II disorders (SCID II). *Clinical Psychology and Psychotherapy*, *18*(1), 75-79.
- Low, G., Jones, D., Duggan, C., Power, M. & MacLeod, A. (2001). The treatment of deliberate self-harm in borderline personality disorder using dialectical behaviour therapy: A pilot study in a high security hospital. *Behavioural and Cognitive Psychotherapy*, *29*, 85-92.
- Luborsky, L., Crits-Cristoph, P., Alexander, L., Margolis, M. & Cohen, M. (1983). Two helping alliance methods of predicting outcomes of psychotherapy. *Journal of Nervous and Mental Disease*, *171*, 480-491.
- Luborsky, L., Diguier, L., Seligman, D. A., Rosenthal, R., Krause, E. D., Johnson, S., Halperin, G., Bishop, M., Berman, J. S. & Schweizer, E. (1999). The researcher's own therapy allegiances: A "wild card" in comparisons of treatment efficacy. *Clinical Psychology: Science and Practice*, *6*, 95-106.
- Lynch, T. R., Chapman, A. L., Rosenthal, M. Z., Kuo, J. R. & Linehan, M. M. (2006). Mechanisms of change in dialectical behavior therapy: Theoretical and empirical observations. *Journal of Clinical Psychology*, *62*(4), 459-480.
- Lynch, T. R., Morse, J. Q., Mendelson, T. & Robins, C. J. (2003). Dialectical behavior therapy for depressed older adults: A randomized pilot study. *American Journal of Geriatric Psychiatry*, *11*(1), 33-45.
- Maffei, C., Fossati, A., Agostoni, I., Barraco, A., Bagnato, M., Deborah, D., Namia, C., Novella, L. & Petrachi, M. (1997). Inter-rater reliability and internal consistency of the structured clinical interview for DSM-IV axis II personality disorders (SCID-II), version 2.0. *Journal of Personality Disorders*, *11*(3), 279-284.
- Mallinckrodt, B., Coble, H.M. & Gantt, D.K. (1995). Working alliance, attachment memories, and social competencies of women in brief therapy. *Journal of Counseling Psychology*, *42*, 79-84.
- Mallinckrodt, B. & Nelson, M. L. (1991). Counselor training level and the formation of the psychotherapeutic working alliance. *Journal of Counseling Psychology*, *38*, 133-138.
- Marmar, C. R., Weiss, D. S. & Gaston, L. (1989). Toward the validation of the California therapeutic alliance rating system. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, *1*, 46-52.
- Martin, D. J., Garske, J. P. & Davis, M. K. (2000). Relation of the therapeutic alliance with outcome and other variables: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, *68*(3), 438-450.

- Marziali, E. (1984). Three viewpoints on the therapeutic alliance: Similarities, differences and associations with psychotherapy outcome. *Journal of Nervous and Mental Disease*, 172, 417-423.
- McCann, R. & Ball, E. M. (2000). DBT with an inpatient forensic population: The CMHIP forensic model. *Cognitive and Behavioral Practice*, 7, 447-456.
- McCann, R. A., Ivanoff, A., Schmidt, H. & Beach, B. (2007). Implementing dialectical behavior therapy with an inpatient forensic population in residential settings with adults and juveniles. In L. Dimeff, M. M. Linehan, and K. Koerner (Eds.), *Dialectical Behavior Therapy in Clinical Practice: Applications Across Disorders and Settings*. New York: Guilford Press.
- McGlashan, T. H. (1986). The chestnut lodge follow-up study: III. Long-term outcome of borderline personalities. *Archives of General Psychiatry*, 43, 20-30.
- McMain, S., Korman, L. M. & Dimeff, L. (2001). Dialectical behavior therapy and the treatment of emotion dysregulation. *Journal of Clinical Psychology In Session: Psychotherapy in Practice*, 57(2), 183-196.
- McMain, S. F., Links, P. S., Gnam, W. H., Guimond, T., Cardish, R. J., Korman, L. & Streiner, D. L. (2009). A randomized trial of dialectical behavior therapy versus general psychiatric management for borderline personality disorder. *American Journal of Psychiatry*, 166(12), 1365-1374.
- McQuillan, A., Nicastro, R., Guenot, F., Girard, M., Lissner, C. & Ferrero, F. (2005). Intensive dialectical behavior therapy for outpatients with borderline personality disorder who are in crisis. *Psychiatric Services*, 56, 193-197.
- Ogles, B. M., Lunnen, K. M. & Bonesteel, K. (2001). Clinical significance: History, application, and current practice. *Clinical Psychology Review*, 21(3), 421-446.
- Orlinsky, D. E. & Howard, K. I. (1986). Process and outcome in psychotherapy. In S. L. Garfield & A. E. Gergin (Eds.) *Handbook of psychotherapy and behavior change* (pp. 311- 384). New York: Wiley.
- Paris, J., Brown, R. & Nowlis, D. (1987). Long-term follow-up of borderline patients in a general hospital. *Comprehensive Psychiatry*, 28, 530-535.
- Pintea, S. (2010). The relevance of results in clinical research: Statistical, practical, and clinical significance. *Journal of Cognitive and Behavioral Psychotherapies*, 10(1), 101-114.
- Rathus, J. H. & Miller, A. L. (2002). Dialectical behavior therapy adapted for suicidal adolescents. *Suicide and Life-Threatening Behavior*, 32(2), 146-157.
- Rizvi, S. L. (2011). Treatment failure in dialectical behavior therapy. *Cognitive and Behavioral Practice*, doi:10.1016/j.cbpra.2010.05.003
- Robins, C. J. & Chapman, A. L. (2004). Dialectical behavior therapy: Current status, recent developments and future directions. *Journal of Personality Disorders*, 18, 73-89.
- Robins, C. J. & Koons, C. R. (2000). The therapeutic relationship in dialectical behavior therapy. In A. N. Sabo & L. Havens (Eds.), *The real world guide to psychotherapy practice* (pp. 237-266). Cambridge, MA: Harvard University Press.

- Rogers, C. R. (1957). The necessary and sufficient conditions of therapeutic personality change. *Journal of Consulting Psychology, 22*, 95-103.
- Rosenthal, M. Z., Gratz, K. L., Kosson, D. S., Cheavens, J. S., Lejuez, C. W. & Lynch, T. R. (2008). Borderline personality disorder and emotional responding: A review of the research literature. *Clinical Psychology Review, 28*, 75-91.
- Safran, J. D., Crocker, P., McMain, S. & Murray, P. (1990). Therapeutic alliance rupture as a therapy event for empirical investigation. *Psychotherapy: Theory, Research, Practice, Training, 27*, 154-165.
- Safran, J. D. & Muran, J.C. (2000). *Negotiating the therapeutic alliance*. New York: Guilford Press.
- Safran, J. D., Muran, J. C., Samstag, L. W., & Stevens, C. (2002). Repairing alliance ruptures. In J. C. Norcross (Ed.), *Psychotherapy relationships that work: Therapist contributions and responsiveness to patients*. (pp. 235-254). New York: Oxford University Press.
- Safran, J. & Walner, L.K. (1991). The relative predictive validity of two therapeutic alliance measures in cognitive therapy. *Psychological Assessment, 3*, 188-195.
- Samstag, L. W., Muran, J. C. & Safran, J. D. (2004). Defining and identifying alliance ruptures. In D. P. Charman (Ed.), *Core processes in brief psychodynamic psychotherapy: Advancing effective practice*. (pp. 187-214). New York: Routledge.
- Saunders, S. M. (2001). Pretreatment correlates of the therapeutic bond. *Journal of Clinical Psychology, 57*, 1339-1352.
- Scheel, K. R. (2000). The empirical basis of dialectical behavior therapy: Summary, critique, and implications. *Clinical Psychology: Science and Practice, 7*, 68-86.
- Simpson, E. B., Pistorello, J., Begin, A., Costello, E., Levinson, J., Mulberry, S., Pearlstein, T., Rosen, K. & Stevens, M. (1998). Use of dialectical behavior therapy in a partial hospital program for women with borderline personality disorder. *Psychiatric Services, 49*, 669-673.
- Skodol, A. E., Rosnick, L., Kellman, D., Oldham, J. M. & Hyler, S. E. (1988). Validating structured DSM-III-R personality disorder assessments with longitudinal data. *American Journal of Psychiatry, 145*, 1297-1299.
- Sneed, J. R., Balestri, M. & Belfi, B. J. (2003). The use of dialectical behavior therapy strategies in the psychiatric emergency room. *Psychotherapy: Theory, Research, Practice, Training, 40*(4), 265-277.
- Soler, J., Pascual, J. C., Tiana, T., Cebria, A., Barrachina, J., Campins, M.J., Gich, I., Alvarez, E. & Perez, V. (2009). Dialectical behaviour therapy skills training compared to standard group therapy in borderline personality disorder: A 3-month randomised controlled clinical trial. *Behaviour Research and Therapy, 47*, 353-358.
- Speer, D. C. (1992). Clinically significant change: Jacobson and Truax (1991) revisited. *Journal of Consulting and Clinical Psychology, 60*, 402-408.

- Springer, T., Lohr, N. E., Buchtel, H. A. & Silk, K. R. (1996). A preliminary report of short-term cognitive-behavioral group therapy for inpatients with personality disorders. *Journal of Psychotherapy Practice and Research*, 5, 57-71.
- Steer, R. A. & Clark, D. A. (1997). Psychometric characteristics of the Beck Depression Inventory-II with college students. *Measurement and Evaluation in Counseling and Development*, 30(3), 128-136.
- Stepp, S. D., Epler, A. J., Jahng, S. & Trull, T. J. (2008). The effect of dialectical behavior therapy skills use on borderline personality disorder features. *Journal of Personality Disorders*, 22(6), 549-563.
- Stevens, C. (2002). *Tracking patterns in the development of the therapeutic alliance and assessing their impact on outcome*. Unpublished doctoral dissertation, New School for Social Research, New York.
- Stevenson, J., Meares, R., & Comerford, A. (2003). Diminished impulsivity in older patients with borderline personality disorder. *The American Journal of Psychiatry*, 160, 165-166.
- Stiles, W. B., Glick, M. J., Osatuke, K., Hardy, G. E., Shapiro, D. A., Agnew-Davies, R., et al. (2004). Patterns of alliance development and the rupture-repair hypothesis: Are productive relationships u-shaped or v-shaped? *Journal of Counseling Psychology*, 51, 81-92.
- Swales, M. A., & Heard, H. L. (2007). The therapy relationship in dialectical behaviour therapy. In P. Gilbert & R. Leahy (Eds.), *The therapeutic relationship in the cognitive behavioral psychotherapies* (pp. 185-204), New York: Routledge.
- Telch, C. F., Agras, W. S. & Linehan, M. M. (2001). Dialectical behavior therapy for binge eating disorder. *Journal of Consulting and Clinical Psychology*, 69(6), 1061-1065.
- Thomas, C. (2008). The OPT session feedback measure. San Francisco Group for Evidence-based Psychotherapy, San Francisco, CA. accessed at <http://www.practiceground.org/page/page/5706241.htm>.
- Trupin, E. W., Stewart, D. G., Beach, B. & Boesky, L. (2002). Effectiveness of dialectical behavior therapy program for incarcerated female juvenile offenders. *Child and Adolescent Mental Health*, 7, 121-127.
- van den Bosch, L. M. C., Koeter, M. W. J., Stijnen, T., Verheul, R. & van den Brink, W. (2005). Sustained efficacy of dialectical behaviour therapy for borderline personality disorder. *Behaviour Research and Therapy*, 43, 1231-1241.
- Verheul, R., van den Bosch, L. M. C., Koeter, M. W. J., de Ridder, M. A. J., Stijnen, T. & van den Brink, W. (2003). Dialectical behaviour therapy for women with borderline personality disorder: 12-month, randomised clinical trial in the Netherlands. *British Journal of Psychiatry*, 182, 135-140.
- Walsh, B. (2004). Using dialectical behavior therapy to help troubled adolescents return safely to their families and communities. *Psychiatric Services*, 55, 1168-1170.
- Wenzel, A., Chapman, J. E., Newman, C. F., Beck, A. T. & Brown, G. K. (2006). Hypothesized mechanisms of change in cognitive therapy for borderline personality disorder. *Journal of Clinical Psychology*, 62(4), 503-516.

- Westen, D. (2000). The efficacy of dialectical behavior therapy for borderline personality disorder. *Clinical Psychology: Science and Practice, 7*, 92-94.
- Whipple, J. L., Lambert, M. J., Vermeersch, D. A., Smart, D. W., Nielsen, S. L. & Hawkins, E. J. (2003). Improving the effects of psychotherapy: The use of early identification of treatment failure and problem-solving strategies in routine practice. *Journal of Counseling Psychology, 50*, 59-68.
- Widiger, T. A. & Weissman, M. M. (1991). Epidemiology of borderline personality disorder. *Hospital and Community Psychiatry, 42*, 1015-1021.
- Wise, E. A. (2004). Methods for analyzing psychotherapy outcomes: A review of clinical significance, reliable change, and recommendations for future directions. *Journal of Personality Assessment, 82*(1), 50-59.
- Woodberry, K. A. & Popenoe, E. J. (2008). Implementing dialectical behavior therapy with adolescents and their families in a community outpatient clinic. *Cognitive and Behavioral Practice, 15*, 277-286.
- Zanarini, M. C., Frankenburg, F. R., Reich, D. B., Silk, K. R., Hudson, J. I. & McSweeney, L. B. (2007). The subsyndromal phenomenology of borderline personality disorder: A 10-year follow-up study. *The American Journal of Psychiatry, 164*, 929-935.
- Zanarini, M. C., Skodol, A. E., Bender, D., Dolan, R., Sanislow, C., Schaefer, E., Morey, L. C., Grilo, C. M., Shea, M. T., McGlashan, T. H. & Gunderson, J. G. (2000). The collaborative longitudinal personality disorders study: Reliability of axis I and II diagnoses. *Journal of Personality Disorders, 14*(4), 291-299.
- Zetzel, E. (1956). Current concepts of transference. *International Journal of Psycho-Analysis, 37*, 369-376.