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The "Art" of Interpreting the "Science" and the "Science" of Interpreting the "Art" of the Treatment of Borderline Personality Disorder

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Borderline personality disorder (BPD) is characterized by affective instability, angry outburst, frequent suicidality and parasuicidality, as well as marked deficits in the capacity to work and to maintain meaningful relationships. BPD has prevalence rates of nearly 1–4% in the general population, 10% in psychiatric outpatient samples, and up to 20% in psychiatric inpatient samples (e.g., Paris, 1999; Torgersen, Kringlen, & Cramer, 2001; Weissman, 1993; Widiger & Frances, 1989; Widiger & Weissman, 1991). In addition, BPD is frequently comorbid with depression, anxiety disorders, eating disorders, posttraumatic stress disorder, and substance abuse, often with detrimental effects on the treatment of these disorders (for a review, see Skodol, Gunderson, Pfohl, Widiger, Livesley, & Siever, 2002). Furthermore, patients with BPD typically experience profound impairment in general functioning and have an estimated suicide completion rate of 8–10% (Work Group on Borderline Personality Disorder, 2001). Thus, BPD is a debilitating and life-threatening disorder that represents a serious clinical and public health concern.

Although patients with BPD are often deemed difficult to treat, there is some evidence that BPD may be a treatable disorder (Perry, Banon, & Ianni, 1999)

and that psychotherapy is the recommended primary technique for its treatment (Oldham et al., 2001). Evidence for the efficacy of specific treatments for BPD now exists (Bateman & Fonagy, 1999; Koons et al., 2001; Linehan, Armstrong, Suarez, Allmon, & Heard, 1991; Linehan, Schmidt, Dimeff, Craft, Kanter, & Comtois, 1999; Linehan et al., 2002; Turner, 2000; Verheul, van den Bosch, Koeter, de Ridder, Stijnen, & van den Brink, 2003), with Dialectical Behavior Therapy (DBT; Linehan, 1993), to date, being perhaps the most extensively studied treatment in randomized controlled trials (RCTs). However, a number of other treatments for BPD have been developed that have demonstrated effectiveness (Blum, Pfohl, St. John, Monahan, & Black, 2002; Brown, Newman, Charlesworth, Crits-Christoph, & Beck, 2004; Clarkin, Foelsch, Levy, Hull, Delaney, & Kernberg, 2001; Levy, Clarkin, Foelsch, & Kernberg, 2004; Ryle & Golynkina, 2000; Stevenson & Meares, 1992). Meanwhile, additional studies testing the effectiveness and efficacy* of new treatments have recently been completed, presented at conferences but remain unpublished (Arntz et al., 2005; Clarkin, Levy, Lenzenweger, & Kernberg, 2005), or are currently being conducted (Markowitz, Blieberg, & Skodal, 2004).

Despite the emergence of new treatments for BPD that have garnered empirical support in both effectiveness and efficacy studies, a growing number of researchers have espoused limiting psychotherapy practice and training to treatments that have demonstrated efficacy in RCTs (Calhoun, Moras, Pilkonis, & Rehm, 1998; Chambless & Hollon, 1998). In addition, managed health care companies often reimburse only for those treatments for BPD that have demonstrated efficacy data and refuse to reimburse for those that have not yet been tested in an RCT. With the proliferation of evidence for the efficacy of DBT and the increasing focus on the dissemination of empirically supported treatments (ESTs), the added value of naturalistic studies that bear on the ecological validity of ESTs is often overlooked. However, there are a number of important limitations to RCTs. RCTs are frequently limited in their generalizability to clinical practice (Borkovec & Castonguay, 1998; Goldfried & Wolfe, 1998; Goldfried & Wolfe, 1996; Morrison, Bradley, & Westen, 2003; Seligman, 1995; Westen & Morrison, 2001), and naturalistic studies may be necessary to help bridge the gap between practice and research (Morrison et al., 2003). Likewise, the utility of RCTs for evaluating a treatment's putative mechanisms of action and underlying theoretical constructs is frequently indirect and limited. In other words, studies that compare purportedly distinct treatments can only tell us which treatment yields the most favorable outcome. The active ingredients or dimensions of the more effective therapy remain unknown and can only be indirectly inferred. Limiting research,

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* In the psychotherapy research literature, a distinction is made between efficacy and effectiveness research. Efficacy studies are those that maximize internal validity to evaluate the impact of treatment under strictly controlled conditions, usually in a research setting such as a university or medical school. Effectiveness studies typically evaluate the impact of a treatment in naturalistic settings and under conditions in which treatment is usually administered, and therefore, maximize external validity (Kazdin, 2003; Nathan, Stuart, & Dolan, 2000).

practice, and training exclusively to treatments that have been validated in RCTs could impede reasonable avenues of study in the treatment of BPD and obstruct access to treatments that might be better-suited to specific patient subgroups.

In this chapter we will summarize the pros and cons of RCTs, present a hierarchical model of evidence in psychotherapy studies that balances concerns about adequate controls and generalizability, and examine more broadly the psychotherapy research which bears on BPD. We will then report results from a series of studies performed at the Personality Disorders Institute at Cornell Medical Center on the treatment of BPD. Finally, we will summarize conclusions that can be drawn from this broader examination of the literature.

PROS AND CONS OF RCTs

Efficacy studies are widely considered the gold standard in psychotherapy research for their emphasis on internal validity through their use of relevant control groups, treatment manuals, random assignment to treatment conditions, and well-defined, homogeneous groups of patients (Nathan, Stuart, & Dolan, 2000). The controls provided by these aspects of RCT designs are important for eliminating rival hypotheses and making specific causal inferences about what treatments are most effective for particular patients under specified conditions. However, RCTs are not immune to threats to internal validity. Particularly in the study of personality disorders, which frequently involve longer-term treatments, patient attrition over longer treatment studies can negate the control provided by randomization (Howard, Orlinsky, & Lueger, 1995). Moreover, randomization and control groups cannot account for every potentially intervening variable, including patient or therapist characteristics that can influence the effects of treatment (Clarkin & Levy, 1998; Howard et al., 1995). The time that elapses between interventions and outcome measurement can also introduce rival hypotheses because any number of unmeasured factors outside the therapy may influence outcome or interfere with treatment effects, especially with personality-based disorders which revolve around the ways that people interact in their daily lives rather than alleviation of symptoms. In addition, recent research has found that purportedly separate and distinct therapeutic approaches tend to overlap considerably in RCTs (Ablon & Jones, 2002), rendering conclusions regarding the efficacy of any one specific treatment package over another problematic. A related issue in many RCTs that detracts from internal validity is the lack of adherence and competency data to ensure that therapists are delivering therapy as prescribed by treatment manuals and not engaging in proscribed techniques. Also, measurement of treatment credibility is important to ruling out expectancy effects, which many RCTs neglect to incorporate into their designs (Borkovec, 1972). In addition, many of the existing RCTs lack sufficient follow-up to determine the long-term effects of these treatments. Because BPD is a long-term chronic disorder and patients may continue to improve or may deteriorate after the conclusion of the study, it is imperative that there be long-term follow-up (at least 2 to 5 years) of well-defined patient groups

in well-characterized treatments. The types of changes that occur during the year or two of a treatment study, such as reduction of self-harm episodes and number and length of hospitalizations, might lead to further changes after the termination of treatment in other domains of patients' lives, such as increased capacity to work and improved stability in personal relationships, all of which go unnoticed without adequate follow-up data.

Moreover, the emphasis on internal validity in RCTs can reduce the relevance and ecological validity of findings (Borkovec & Castonguay, 1998; Goldfried & Wolfe, 1998; Goldfried & Wolfe, 1996; Morrison et al., 2003; Seligman, 1995). Controls in such studies are rigorous, usually involving strict inclusion and exclusion criteria that may produce treatment samples that are nonrepresentative of the comorbidity and heterogeneity usually seen in private practice, especially among patients with BPD who typically show a pattern of "complex comorbidity" (Zanarini et al., 1998). A number of studies have shown that patient groups typically excluded from RCTs tend to have poorer outcomes or require substantially longer treatments (Humphreys & Weisner, 2000; Mitchell, Hoberman, Peterson, Mussell, & Pyle, 1996; Thompson-Brenner, Glass, & Westen, 2003), suggesting that findings from rigidly controlled RCTs might not generalize to such patient groups. In addition, treatments are often manualized in efficacy studies with careful supervision to control for adherence and competency, a tactic which is rare in naturalistic settings. The randomization process itself can also impact external validity because both therapists and patients lose their freedom of choice; patients in private practice have a choice of service providers, and therapists in private practice decide which patients they can work with, and typically refer those with whom they cannot to other therapists (Blatt & Zuroff, 2005). Further, due to over-reliance on the drug-metaphor for designing treatment studies (Guthrie, 2000) and other pragmatic factors such as inadequate funding for long-term treatment studies and patient attrition, RCTs usually offer shorter doses of treatment for BPD than would be common in the community. Given these threats to external validity in many RCTs, it is often unclear whether or not treatments found to be efficacious in such studies are transportable and will work as well or in the same way when they are implemented in clinical settings.

The numerous limitations of efficacy studies have led many investigators to recommend searching for empirically supported principles (ESPs) of treatment, or evidence-based explanations of treatment, rather than credentialed, trademarked, brand-name, or evidence-based treatment packages (Ablon & Jones, 2002; NIMH Workshop Summary, 2002; Rosen & Davidson, 2003). Likewise, Borkovec and Castonguay (1998) and Weisz (2003) recommend conducting well-controlled therapy trials in more naturalistic settings. Such hybrids of efficacy and effectiveness research may help to bridge the gap between science and practice (Carroll & Rounsaville, 2003). At the same time, however, there seems to be considerable data already in existence at multiple levels of scientific evidence that could be combined to form increasingly well-rounded inferences about the treatment of

BPD. Thus, a broader definition of evidence may be necessary when evaluating the effects of psychotherapy for this complex disorder.

THE HIERARCHY OF TREATMENT EVIDENCE

Gabbard and colleagues (Gabbard, 2002; Gabbard, Gunderson, & Fonagy, 2002) and others (e.g., Clarke & Oxman, 1999) have discussed a stage model, or hierarchy, of treatment evidence as a function of internal and external validity. They have suggested that evidence from multiple sources within this model is necessary in order to build an empirically grounded framework for specific forms of psychotherapy. In ascending levels of internal validity and descending levels of external validity, the hierarchy of treatment evidence starts with the provision of an argument or the articulation of clinical innovation, and proceeds through clinical case studies, clinical case series, pre-post designs, quasi-experimental designs, and RCTs. We argue that this hierarchy, in combination with the examination of evidence for specific techniques and mechanisms of action (Levy et al., 2006), provides better breadth of evidence and better validity than focusing on RCTs alone. In the next section, relevant studies on psychotherapy for BPD will be discussed in terms of this hierarchy, beginning with pre-post designs. The goal will be to integrate these findings into coherent inferences having both internal and external validity.

Pre-Post Designs

Pre-post designs are those that employ neither randomization nor control groups, and instead use patients as their own controls by measuring the amount of change in outcome variables over time. In pre-post studies, the lack of a comparison group limits the interpretation of positive change as attributable to the treatment. That is, the changes observed in the patients may have occurred over time without treatment. However, such studies are useful for showing the feasibility of a treatment approach, generating initial effect sizes, and for identifying potential predictors of outcome. Therefore, pre-post designs are an ideal first step in establishing a new treatment's success with a specific patient population.

There are a number of pre-post design studies that have been carried out with borderline patients (e.g., Blum et al., 2002; Brown et al., Clarkin et al., 1992; Clarkin et al., 2001; Low et al., 2001; Cookson et al., 2001; Miller et al., 2000; Ryle & Golinkina, 2000; Smith, Koenigsberg, Yeomans, Clarkin, & Selzer, 1995; Stevenson & Meares, 1992; Trupin et al., 2002; Wildgoose et al., 2001; Yeomans, Gutfreund, Selzer, Clarkin, Hull, & Smith, 1994; 1998 Gold Award, American Psychiatric Association, 1998). Stevenson and Meares (1992) conducted a pre-post study that evaluated the effects of a nonmanualized psychodynamic treatment (based on the ideas of Kohut, Winnocott, and Hobson's conversational model) for patients with BPD. They found that compared to pre-therapy, patients at the end of treatment showed an increase in time employed and decreases in

number of medical visits, number of self-harm episodes, and number and length of hospitalizations. Although the inferences that can be drawn from these results are limited by the lack of a control group, these findings supported further development and study of psychodynamic treatments for BPD.

Other early pre-post studies of treatments for BPD (e.g., Clarkin et al., 1992; Smith, Koenigsberg, Yeomans, Clarkin, & Selzer, 1995; Yeomans, Gutfreund, Selzer, Clarkin, Hull, & Smith, 1994) have identified risk factors for BPD patient drop-outs from psychotherapy, having important implications for both researchers and clinicians working with this patient population. These studies have shown that younger patients and those high in hostility are most likely to drop out of treatment (Smith et al., 1995). In this early work, however, the establishment of a strong treatment contract was not emphasized, and dropout rates were generally high (36% at 6 months into treatment). The often ego-syntonic nature of personality disturbance may also account for premature drop-out in younger patients, who may not recognize the seriousness of their difficulties until later in life. Furthermore, hostility in BPD is likely to disturb the patient's capacity for relatedness to the therapist. Other pre-post studies have demonstrated the importance of establishing the treatment frame (i.e., the contract) with BPD patients for improving compliance and avoiding premature termination of therapy and violation of therapeutic boundaries (Yeomans et al., 1994).

More recent pre-post studies have tested manualized treatments or modifications of manualized treatments for BPD. For example, Bohus and colleagues (Bohus, Haaf, Stiglmayr, Pohl, Böhme, & Linehan, 2000) showed that DBT, a manualized cognitive behavioral therapy that was developed for treating chronically suicidal or parasuicidal women in outpatient settings, could be adapted for inpatient use. DBT (Linehan, 1993) includes weekly individual psychotherapy that emphasizes validation and acceptance, balanced with behavioral strategies designed to promote change. DBT also incorporates weekly groups that focus on the acquisition of interpersonal, self-regulation, and distress-tolerance skills. Although originally intended as an outpatient treatment, Bohus and his colleagues developed an intensive three-month inpatient program based on DBT, including weekly individual therapy and skills training groups, as well as weekly mindfulness, psychoeducation, and peer groups. Compared to assessments at admission, patients showed significant improvements one month after discharge in reported anxiety, depression, dissociation, and global stress, and a highly significant decrease in parasuicidal acts. This research generated initial effect sizes for DBT with inpatients, paving the way for more controlled studies with inpatient populations. Other pre-post studies have extended DBT for use with incarcerated female juvenile offenders (Trupin, Stewart, Beach, & Boesky, 2002), suicidal adolescents (Miller, Wyman, Huppert, Glassman, & Rathus, 2000), and women with binge-eating disorder (Telch, Agras, & Linehan, 2000).

Non-DBT cognitive approaches have also been evaluated with the pre-post research methodology. Brown and colleagues (Brown et al., 2004) demonstrated preliminary support for cognitive therapy (CT) for BPD, which focuses on

changing automatic dysfunctional thought patterns. Patients treated with one year of CT showed significant decreases in hopelessness, depression, suicidality, and BPD criteria at 18-month assessments, but effect sizes ranged from only .22 to .55, which were in the moderate range (Cohen, 1988).

Ryle and Golynkina (2000) conducted a pre-post study evaluating the effectiveness of a time-limited Cognitive Analytic Therapy (CAT) for treating BPD. The CAT model of BPD emphasizes collaboration between patient and therapist in the identification of the partial dissociation of personality into dysfunctional patterns of affect, self regulation, and interpersonal behavior. Diagrams of these patterns are collaboratively developed and modified with the patient during treatment. This study demonstrated that about half of the patients who completed 24 sessions of CAT no longer met full criteria for the BPD diagnosis at the end of treatment. In addition, at six-month follow-up, the patients who no longer met BPD diagnostic criteria were more likely to be employed and involved in long-term relationships. These authors found that more severe BPD features, history of parasuicide, alcohol abuse, and unemployment, were predictors of poorer outcomes, highlighting the influence of pre-treatment severity on outcomes in BPD patients. Mean follow-up assessment scores showed continued improvement at 18-month post-treatment, but high attrition rates prohibited statistical analyses of follow-up assessments beyond the 18-month point.

Yet another pre-post study (Blum, Pfohl, St. John, Monahan, & Black, 2002) evaluated the effects of Systems Training for Emotional Predictability and Problem Solving (STEPPS), a short-term treatment program designed for BPD patients in rural areas. STEPPS is a skills-based approach that utilizes cognitive-behavioral and psychoeducational techniques in a group format and is conceptualized as adjunct to a patient's existing treatment. Blum and colleagues found moderate to high levels of satisfaction in patients and therapists who participated in STEPPS, and decreases in patients' self-reported negative behaviors, negative mood, and depression. Although these results are promising, they must be interpreted cautiously for several reasons in addition to the lack of a control group to rule out maturational and history effects. First, structured interviews were not used to assess patients for BPD, so there may have been patients included in the study who were subthreshold for the disorder. This suggests that these results might not generalize to more severely disturbed patients with BPD. Second, this study suffers from inconsistent data collection and limited domains of outcome. That is, patients were asked to provide self-report data at STEPPS group sessions, and the incompleteness of the data suggests patient noncompliance. In other words, these results may have resulted from a selected sample of patients who attended regularly and were more satisfied with treatment than those who did not attend or refused to complete the required group assignments used to determine outcome. Therefore, issues such as reliable clinical diagnoses and multiple outcome domains may be just as important to the validity of psychotherapy research as control groups and randomization.

The Borderline Psychotherapy Research Project at New York Presbyterian Hospital-Weill Cornell Medical Center, headed by Drs. Otto Kernberg and John Clarkin, conducted a pre-post study (Clarkin et al., 2001) to evaluate the effects of Transference-Focused Psychotherapy (TFP; Clarkin, Yeomans, & Kernberg, 1999) a manualized and highly structured psychodynamic treatment based on Kernberg's (1984) object relations model of BPD. Kernberg's model focuses on the development of mental representations that are derived through the internalization of attachment relationships with caregivers. According to Kernberg's model, BPD is characterized by unintegrated and undifferentiated representations of self and other (i.e., identity diffusion) and immature defense mechanisms such as projection and splitting. The major goals of TFP are better behavioral control, increased affect regulation, more intimate and gratifying relationships, and the ability to pursue life goals. These goals are hypothesized to be accomplished through the modification of primitive defensive operations and the resolution of identity diffusion that perpetuates the fragmentation of the patient's internal representational world. Thus, in contrast to therapies that focus on the short-term treatment of symptoms, TFP has the ambitious goal of not just changing symptoms, but changing the personality organization, which is the context of the symptoms. In contrast to most manuals for CBT or short-term treatments, the TFP manual could be described as principle-based rather than sequentially based, which requires the clinician to be flexible and use clinical judgment. Using video-taped sessions and supervisor ratings, Kernberg and his colleagues have been able to train both senior clinicians and junior trainees at multiple sites to adherence and competence in applying the principles of TFP.

For the pre-post study (Clarkin et al., 2001), participants were recruited from varied treatment settings (i.e., inpatient, day hospital, and outpatient clinics) within the New York metropolitan area. Participants were all women between the ages of 18 and 50 who met criteria for BPD through structured interviews. All therapists (senior therapists to postdoctoral trainees) selected for this phase of the study were judged by independent supervisory ratings to be both competent and adherent to the TFP manual. Three senior supervisors rated the therapists for TFP adherence and competence. Throughout the study, all therapists were supervised on a weekly basis by Kernberg and at least one other senior clinician (A. Appelbaum, F. Yeomans, & M. Stone).

The one-year drop-out rate was 19.1% and no patient committed suicide. Two out of the total of 23 patients dropped out after four months, and two dropped out after eight months of treatment. These results compare well with other treatments for BPD: Linehan et al., (1991) had a 16.7% drop-out rate, and one suicide (4%); Stevenson and Meares' study (1992) had a 16% drop-out rate and no suicides; and Bateman and Fonagy's study (1999) had a 21% drop-out rate and no suicides. None of the treatment completers deteriorated or were adversely affected by the treatment. Therefore, it appears that TFP is well-tolerated.

Further, 52.9% of participants no longer met criteria for BPD after one year of twice-weekly outpatient treatment. This rate compares quite well with that

found by others. Stevenson and Meares (1992) found that 30% of patients in their treatment study no longer met criteria for *DSM-III* BPD at a one-year follow-up. Perry, Banon, and Ianni (1999) note that naturalistic follow-up studies of patients with BPD yield an estimated recovery rate of only 3.7% per year and four active treatment studies for mixed personality disorders (with 53% having borderline personality disorder) produced a recovery rate of 25.8% per year.

Overall, the major finding in the Clarkin et al. (2001) pre-post study was that patients with BPD who were treated with TFP showed marked reductions in the severity of parasuicidal behaviors, fewer emergency room visits, hospitalizations, and days hospitalized. The effect sizes were large and no less than those demonstrated for other BPD treatments (Bateman & Fonagy, 1999; Bohus et al., 1999; Linehan et al., 1991). In addition, reliable increases in global functioning and a generally low drop-out rate were observed in these patients. These results suggest the potential utility of TFP for treating BPD patients and that more research on TFP is warranted.

In summary, pre-post designs are limited in that the improvements seen may have been attributable to the effects of time, rather than the treatment itself. Without a comparison group, it is impossible to eliminate this possibility. In order to address this limitation, researchers will need to examine patients treated in their modalities as compared to patients treated in other modalities. Despite these weaknesses, pre-post studies are useful for establishing the feasibility and tolerability of a treatment, and for generating initial effect sizes. The results of these studies have revealed promising findings and provided initial evidence for psychodynamic (both based on Kernberg and Kohut's theorizing), non-DBT cognitive therapy (Brown et al., 2004), and an integrative cognitive-analytic outpatient program (Ryle and Golynkina, 2000). Further, pre-post studies have extended DBT for inpatient, forensic, and adolescent populations, and provided some cautious support for a supplemental skills-based approach (i.e., STEPPS; Blum et al., 2002). Pre-post studies have also importantly led to the identification of risk factors for drop-out from treatment and of technical changes that may be necessary when treating patients with BPD (such as a treatment contract and a strong, consistent frame).

Quasi-experimental Designs

Next in the hierarchy of treatment evidence are quasi-experimental designs, which compare an experimental treatment with another treatment condition but do not employ random assignment like RCTs. Without randomization, however, the possibility of ruling out rival hypotheses is decreased because patient outcomes could be affected by any number of nonrandom factors, such as reliable differences between treatment groups in patient severity. Even if there are no differences between the treatment group and the comparison group in terms of demographic, diagnostic, or severity variables, groups may still differ on some unmeasured variable (e.g., reactance or psychological mindedness) that may relate to outcome.

Despite these limitations, many quasi-experimental studies of treatments for BPD have extended previous pre-post studies, increasing the confidence of the findings from these studies and suggesting the value of conducting RCTs to further validate specific treatments. For example, Meares, Stevenson, and Comerford (1999) conducted a quasi-experimental study that confirmed the results of an earlier pre-post study (Stevenson & Meares, 1992) evaluating psychodynamic psychotherapy for BPD. Meares et al. (1999) compared BPD patients treated twice weekly for one year with a manualized interpersonal-psychodynamic (IP) psychotherapy to BPD patients who were on a wait list and receiving treatment-as-usual (TAU) or no formal psychotherapy for the same period. Thirty percent of IP-treated patients no longer met criteria for a *DSM-III* (American Psychiatric Association, 1980) BPD diagnosis at the end of the treatment year, whereas all of the TAU patients still met criteria for the diagnosis. These results demonstrated that psychotherapy based on psychodynamic principles is generally beneficial to patients with BPD in a naturalistic setting, having strong ecological validity. However, the TAU group were essentially on a wait list for treatment (because not enough therapists were available at the time), and therefore, many received no treatment at all, making it difficult to infer more from these results than simply that IP is more effective than no treatment for BPD.

Another quasi-experimental study (Rathus & Miller, 2002) compared a group of suicidal adolescents treated with 12 weeks of DBT (modified to include family therapy) to a TAU group, and found that those treated with DBT had significantly fewer hospitalizations and were more likely to complete treatment than those in the TAU group. These results were especially noteworthy considering that the DBT group had reliably more depressive, anxiety, and substance abuse disorders, more Axis I diagnoses, more hospitalizations, and more BPD diagnoses at pre-treatment assessment than did the TAU group. In addition, this study was conducted in a hospital setting, suggesting that these results might have greater ecological validity than most previous studies of DBT, which were conducted in university research settings. Another interesting aspect of this study is that it was conducted in an urban area (New York City) with an ethnically diverse sample of adolescents (almost 70% of the total patient sample were Hispanic), extending the generalizability of DBT's effectiveness for a variety of populations. However, as acknowledged by the researchers, the lack of randomization to treatment groups is problematic because the groups differed in a number of variables. One potential confound noted by the authors is the possibility that adolescents who are more depressed or generally symptomatic, as were those in the DBT group, may be more responsive to psychotherapy. In addition, the investigators only reported completer analyses and did not report analyses including patients who began but did not complete the study (intent-to-treat analysis).

A quasi-experimental study conducted at the Borderline Psychotherapy Research Project at New York Presbyterian Hospital-Weill Cornell Medical Center (Levy et al., 2006) provided further support for the effectiveness of TFP in treating BPD. In this study, 26 women diagnosed with BPD and treated with TFP were

compared to 17 patients in a TAU group. There were no significant pre-treatment differences between the treatment group and the comparison group in terms of demographic or diagnostic variables, severity of BPD symptomatology, baseline emergency room visits, hospitalizations, days hospitalized, or global functioning scores. Of the 17 patients in the comparison group, six patients entered once-weekly individual psychotherapy (three with private therapists affiliated with Cornell and three with therapists working in the NYPH Outpatient Department), seven patients entered treatment in a NYPH day program (five in Dialectical Behavioral Therapy, one in psychodynamic therapy, and one who spent six months in psychodynamic therapy and six months in DBT), and four patients were in and out of various treatments both at NYPH and outside the Cornell system. None of the TAU patients were discharged from the Outpatient Department. Individual psychotherapy was provided at the NYPH for all but two TAU participants. Both patients in psychotherapy outside NYPH's Outpatient Department were seen by therapists trained and with clinical appointments at Cornell Medical College. Overall, the TAU therapists represented a multidisciplinary group of therapists whose experience level generally falls somewhere between the first and second cohorts of therapists in the experimental condition. The one-year attrition rate was 18.8%.* Overall, of the 32 patients who completed the treatment contract and started TFP, six did not complete the year of treatment and no patients committed suicide.

Compared to those treated with TAU, patients treated with TFP showed significant decreases in suicide attempts, hospitalizations, and number of days hospitalized, as well as reliable increases in global functioning. All of the within-subjects and between-subject effect sizes for the TFP-treated participants indicated favorable change. The within-subject effect sizes ranged from 0.73 to 3.06 for the TFP- treated participants, with an average effect size of 1.19, which is well above what is considered "large" (Cohen, 1988). These findings confirmed the previous success of TFP with BPD patients (Clarkin et al., 2001) and justified further validating TFP in comparison to established treatments in an RCT (Clarkin et al., 2004). Furthermore, because this study's participants were clinically referred polysymptomatic patients (representative of those seen in clinical practice), who were treated in clinicians' private offices, these results are likely to be high in external validity.

In summary, despite the potential confounds of between-group differences in demographics, severity of psychopathology or symptomatology, or unmeasured variables, the findings from quasi-experimental treatment studies with borderline patients suggest (1) greater confidence in the findings from earlier pre-post studies examining psychodynamic and interpersonally oriented treatments, and (2) the usefulness of DBT for urban, ethnically diverse suicidal adolescents. The

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* Of the 26 TFP-treated patients in this study (Levy et al., 2006), 17 patients were the same as those treated in the pre-post study (Clarkin et al., 2001). Therefore, the 18.8% attrition rate includes drop-outs from the pre-post study sample, from which four patients dropped out and two patients were administratively discharged. None of the additional nine TFP patients in the Levy et al. (2006) study, and none of the seventeen TAU patients, dropped out.

fact that many quasi-experimental studies are conducted in naturalistic settings and patients often have more choice of treatment than in RCTs increases their ecological validity.

Randomized Controlled Trials

Gabbard and colleagues (Gabbard, 2002; Gabbard, Gunderson, & Fonagy, 2002, as well as the Cochrane report (Clarke & Oxman, 1999), suggest that even within RCT designs there is a hierarchy of treatment evidence based on varying levels of control provided by different comparison groups. The most rigorous variety of RCT is the comparison of an experimental treatment with a well-established, well-delivered, alternative treatment. Less rigorous forms of RCTs, ordered according to levels of internal validity, are those that compare the experimental treatment with placebo, TAU, and wait-list control groups, all of which may suffer from decreased treatment credibility in control groups that could lead to confounding expectancy effects.

To date, there have been 11 RCTs with BPD patients across these various levels of control: comparison with well-established, well-delivered, alternative treatment (Clarkin et al., 2004), placebo (Geisen-Bloo et al., 2006; Linehan et al., 2006; Munroe-Blum & Marzali, 1995; Turner, 2000; Linehan et al., 2002),and TAU (Verhual et al., 2003; Koons et al., 2001; Linehan et al., 1999; Bateman & Fonagy, 1999; Linehan et al., 1991). Other controlled studies reported in the literature are difficult to interpret because the studies focused on either suicidal behavior or mixed types of personality disorders without specifying borderline cohorts (Evans, Tyrer, Catalan et al., 1999; Guthrie, Kapur, Mackway-Jones et al., 2001; Liberman & Eckman, 1981; Piper, Joyce, McCallum, & Azim, 1998; Salkovskis, Atha, & Storer, 1990; Tyrer, Thompson, Schmidt, Jones, Knapp, Davidson et al., 2003).

Wait-List Control

At the very lowest level of control in the proposed hierarchy is the wait-list control group design, which is least preferred in research with BPD patients due to ethical reasons (i.e., withholding treatment from individuals in acute distress) as well as the lack of control for therapist contact. Because of the seriousness of BPD and the risk for suicide, wait-list control groups are rarely used in prospective psychotherapy studies for this disorder; however, there was one wait-list control group used in a naturalistic quasi-experimental study (Meares et al., 1999) due to a shortage of therapists. This study, however, did not randomly assign patients to groups and was therefore reviewed previously in this chapter as a quasi-experimental study. Briefly, this study found that 30 percent of patients treated with manualized interpersonal-psychodynamic psychotherapy no longer met BPD criteria after one year of treatment, while all patients in the comparison group remained unchanged in diagnosis.

Treatment-As-Usual. Treatment-as-usual (TAU) comparisons have been employed with great success in RCTs for BPD (Linehan et al., 1991; Bateman & Fonagy, 1999). The rationale for a TAU group is that a no-treatment placebo control is not sufficient, ethical, or practical for patients with BPD who often present with severe symptoms, including suicidality. In addition, proponents of a TAU approach suggest that the first necessary step is to demonstrate that the experimental treatment produces effects superior to existing treatments. TAU controls for the effects of spontaneous remission, for the effects of reassessments on outcome measures, and for the beneficial effects of treatments other than the experimental group. However, TAU comparison groups tend to reduce the specificity of conclusions that can be drawn from findings due to the fact that little can be known about what is actually provided in "treatment-as-usual," and some TAU groups actually involve little to no treatment at all. For example, in Linehan's initial study (Linehan et al., 1991) 27% of the participants in the TAU immediately dropped out of treatment and at any given time only about 50% of the participants in the TAU were in any type of treatment at all. Likewise, in the Bateman and Fonagy study (1999), patients in the TAU group received no formal psychotherapy and, unless hospitalized, only received twice-monthly psychiatric services. Thus, with BPD patients, TAU may be better conceptualized as non-treatment-as-usual or chaotic-treatment-as-usual. Unfortunately, most RCTs evaluating treatments for BPD have used TAU designs (Clarkin, Levy, Lenzenweger, & Kernberg, in review; Gisien-Boo et al., 2006; Monroe-Blum & Marzialli, 1994; Linehan et al., 2002 and Turner, 2000, for exceptions).

AU: Update? DONE. -LNS

The first RCT to examine a specific treatment for BPD was conducted by Linehan and colleagues (Linehan et al., 1991) to evaluate the efficacy of DBT in comparison to TAU for chronically parasuicidal women with BPD. At the end of one year of treatment, participants randomized to DBT showed a reduction in the number and severity of suicide attempts and a decrease in the length of inpatient admissions compared to those in the TAU group. In addition, DBT participants were significantly more likely than TAU participants to begin therapy, maintain treatment with the same therapist throughout the year, and to continue therapy. This was a seminal study in psychotherapy research for BPD, generating the first results suggesting the efficacy of a manualized treatment for reducing suicidality and parasuicidality in BPD patients. However, the study was not without its flaws and limitations. Linehan and Heard (1993) later reported that whereas DBT subjects received free treatment, TAU subjects were given referrals to low-fee treatment settings and had to pay for therapy. This introduces a potential confounding difference between the two groups in the availability of treatment. In addition, as mentioned earlier and as noted in Scheel's (2000) critique, about 27% of the TAU patients actually received no therapy at all, the amount of therapy received by the remaining 73% of the TAU group was unreported, and only about half received stable therapy for the year. Given that DBT is an intensive therapy that involves at least three hours of therapist contact per week, there was likely

to be a large difference between groups in therapist contact.* Moreover, a reduction in suicide attempts and hospitalizations in the DBT group is not surprising considering that DBT is a treatment that focuses explicitly on keeping patients out of the hospital (Linehan, 1993).

Follow-up data on the patients from the Linehan et al. (1991) RCT were mixed. At six-month follow-up (Linehan, Heard, & Armstrong, 1993), there were no differences between groups in the number of days hospitalized, reasons for living, and levels of hopelessness and depression. Further, at one-year follow-up, there were no differences between groups in the number of days hospitalized and in frequency of self-destructive acts, with some patients treated with DBT showing variable maintenance of treatment effects. In addition, the follow-up sample sizes were too small to reliably detect differences between those patients who had continued to receive treatment after the study's termination and those who had not, indicating that any maintenance of treatment effects in the DBT group could have resulted from more therapy. Unfortunately, follow-up data are not available for these patients beyond one year. These results highlight the importance of long-term follow-ups in the evaluation of treatment efficacy. Moreover, as noted by the authors, these findings are consistent with the general clinical consensus that one year of treatment is not sufficient for long-term change in patients with BPD. However, contrary to clinical folklore, this study showed that there could be significant and important concrete changes during the first year of treatment for borderline patients.

Subsequent RCTs comparing DBT to TAU have provided further evidence for the success of DBT in treating borderline patients, and have extended DBT to other patient populations. Linehan and colleagues (1999) compared DBT with TAU for drug-dependent women with BPD and found that DBT patients showed significantly greater reductions in drug abuse (as measured by drug-positive urines) and gains in social adjustment. However, DBT patients again had more treatment than the TAU patients (43.14 ± 10.67 vs. 21.88 ±3 2.32 days), introducing the rival hypothesis that DBT patients may have improved more than TAU as a result of therapist contact or other common factors, rather than as a result of specific techniques of DBT. In addition, the sample size was small and there was a difference in drop-out definitions (TAU patients were considered a drop-out if they never went to therapy, or if they dropped out anytime following the first session, whereas, DBT patients were considered drop-outs if they missed four consecutive weeks of group or individual sessions). Most importantly, there was a serious confound regarding the measurement of drug-positive urines. Drug

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* Although Linehan et al. (1991) reported the results of a regression analysis to evaluate the relationship between number of therapist contact hours and parasuicidal behavior independent from treatment condition and found nonsignificant results, a regression analysis conducted in reverse order, with therapy hours entered into the equation first and treatment condition entered second, would have clarified the important question of whether or not treatment condition was significantly related to parasuicide over and above the contribution of therapist contact hours.

screens were considered positive if the sample was late or absent. The TAU was conducted outside the medical center where the drug screens were performed. As a result, TAU patients had no reason to visit the medical center at least twice weekly, as required. The TAU patients' samples may therefore have been more likely to be missing or late for reasons other than actually being positive for drugs. Thus, TAU patients may have been over-represented in positive drug screens.

In another RCT (Koons et al., 2001), outcome for women veterans diagnosed with BPD was evaluated after six months of DBT compared to TAU. Both groups showed decreases in suicidal ideation, hopelessness, depression, and anger expression, but the DBT group showed greater decreases than TAU. DBT also showed decreases in anger experienced and not expressed, parasuicide, and dissociation, whereas these symptoms did not decrease significantly in TAU. Neither group showed decreases in anxiety. These findings suggest that DBT can lead to rapid improvement for female BPD patients in terms of symptoms. Another important finding of this study is that DBT could be effective when provided by a collaborative research group that is somewhat independent of the treatment's developer, suggesting the portability of DBT. Further, the authors assessed adherence and competence using the DBT Expert Rating Scale (Linehan, Lockard, Wagner, & Tutek, 1996). However, the sample size was small (only 10 patients in each group), indicating that analyses may have been underpowered; this also limits generalizability. In addition, there were pretreatment differences in anxiety and differences in treatment credibility and structure, which may have influenced outcome. Finally, the lack of intent-to-treat analyses limits conclusions about effectiveness.

Verhuel et al. (2003) again evaluated the efficacy of DBT compared to TAU for 64 clinically referred women with BPD, and found that those treated with DBT showed significant decreases in self-mutilating behavior and less treatment dropout, although they found higher drop-out rates than previous studies of DBT. One of the strengths of this study was the sampling which resulted in a broader group of BPD patients. Interestingly, the authors examined outcome as a function of severity of illness (as measured by frequency and severity of parasuicides), and the results suggested that DBT may be more successful for patients who are parasuicidal than for those who are not.

In an RCT, Bateman and Fonagy (1999) compared the effectiveness of 18 months of a psychoanalytically oriented day hospitalization program with routine general psychiatric care for patients with BPD. Patients randomly assigned to the psychoanalytic day hospital program, now called mentalization-based therapy (MBT; Bateman & Fonagy, 2004) showed statistically significant improvement in depressive symptoms and better social and interpersonal functioning, as well as significant decreases in suicidal and parasuicidal behavior and number of inpatient days. Patients were reassessed every three months for up to 18 months post-discharge (Bateman & Fonagy, 2001). Follow-up results indicate that patients who completed the MBT not only maintained their substantial gains but also showed continued steady and statistically significant improvement on most measures, suggesting that BPD patients can continue to demonstrate gains in functioning

long after treatment has ended. At 18-month post-discharge follow-up, 59.1% of patients treated with MBT were below the BPD diagnostic threshold, compared to only 12.5% of those treated in routine general psychiatric care.

In summary, a number of RCTs with comparison to TAU groups exist (Bateman & Fonagy, 1999; Linehan et al., 1991; Linehan et al., 1999; Koons et al., 2001; Verhuel et al., 2003). DBT clearly has marshaled the most evidence of this kind, although it is important to note that there is evidence for psychodynamic treatments as well (Bateman & Fonagy, 1999, 2001). It is also important to note that TAU comparisons are often ill-defined, unsupervised, and unmanualized treatments (or no treatment), limiting the conclusions that can be drawn from this type of data. In addition, studies comparing treatments to TAU groups do not provide efficacy data beyond TAU groups (i.e., efficacy over to supervised or manualized treatments).

Placebo

Placebo conditions are intended to control for common factors such as therapist warmth, empathy, and attention, yet they are controversial due to the ethical dilemma of providing an "inert" treatment instead of one that is known to be effective. In addition, researchers must balance the inertness of a placebo treatment with strength of the placebo treatment. Often researchers choose or design placebo conditions that are intended to fail and thus do not provide the intended placebo control. Other times placebo treatments contain active ingredients of the experimental treatment or other active mechanisms that are beyond the control of common factors and attention. Finally, placebo treatments are often perceived by patients and therapists as less credible (Borkovec, 1972), creating the potential confounds of expectancy and therapist effects. However, RCTs that evaluate specific treatments for BPD in comparison to a placebo control condition allow for more specific and internally valid conclusions than the typical TAU study because often TAU is either poorly defined or actually consists of no treatment at all, whereas placebo conditions allow for more control by delivering a well-defined and well-organized comparison treatment.

One such placebo control study by Monroe-Blum and Marziali (1995) randomly assigned 79 women to an Interpersonal Group Psychotherapy (IGP) or Individual Expressive Psychodynamic Psychotherapy (IEPP), which was conceptualized as a placebo. IGP was based on Dawson's relationship approach, whereas IEPP control condition was modeled after Kernberg's expressive psychotherapy at that time (pre-transference focused psychotherapy). This is a study where the placebo may have been too strong. The total cohort showed significant improvements on all major outcomes at completion of treatment, but there were no between-group differences. The authors note that IGP was briefer, less expensive, can be offered by a range of service providers. However, therapists in the IEPP condition did not receive the same level of supervision and structure as the IGP condition, nor was

there a manual for the IEPP condition. Thus, with supervision, structure, and a manual, the IEPP condition may have achieved even better results.

Another placebo control study (Turner, 2000) compared a psychodynamically modified DBT (PM-DBT) treatment to client-centered psychotherapy (CCT; intended to control for common factors). Modifications in the PM-DBT condition included the use of psychodynamically oriented therapists, psychodynamic techniques—including interpretations, and modified skills groups. In addition, to help control for therapist contact, both conditions received the modified skills group. To control for between-group therapist effects, the same therapists, all of whom were psychodynamic and family-systems oriented, treated patients in both conditions. However, there may have been therapist loyalty effects, such that therapists could have believed that one treatment was more credible than the other, which may have influenced results. Outcomes showed that the PM-DBT group improved more than the CCT group on most measures. These results revealed more about the potential mechanisms of action in DBT than previous efficacy studies. Although many clinical theorists have argued that DBT is primarily effective because of its use of skills groups, the fact that skills groups were utilized in both groups and the PM-DBT group still demonstrated better outcomes indicates that something beyond the skills group must be an important mechanism of action in the treatment of BPD. In these results, the quality of the therapeutic alliance accounted for as much of the outcome as did condition. In addition, three of the four therapists were more effective using DBT than CCT (one of four was more effective using CCT than DBT), suggesting the importance of continuous supervision for maintaining therapist competence and maintaining the treatment frame. Importantly, this study showed that contrary to assertions made by Linehan (1993), psychodynamic techniques can be integrated with DBT, and psychodynamically trained therapists can competently learn and deliver DBT effectively without having a background in cognitive-behavioral therapy or principles of behavior therapy.

In another placebo control study, Linehan et al. (2002) evaluated DBT compared with comprehensive validation therapy with a 12-step program (CVT+12s) for opioid-dependent women with BPD. Both DBT and CVT+12s were manualized, delivered by experienced therapists, and conducted in an academic treatment setting. Thus, CVT+12s served as a "placebo" condition to control for the validation-based strategies employed in DBT (e.g., therapist warmth, responsiveness, and empathy). All patients were given opiate agonist therapy and access to telephone consultations and crisis intervention. The 12-step component of CVT+12s consisted of 12-step group meetings for two hours weekly and recommended additional group and sponsor meetings. Only the DBT group received individual skills coaching and skills group training. Results demonstrated that both DBT and CVT+12s were effective in reducing opioid use and maintaining the reduction of opioid use during a four-month follow-up, as well as in improving global functioning, with no between-group differences in these domains. However, CVT+12s was significantly superior to DBT in treatment retention (drop-out in DBT was 36% compared to 0% in CVT+12s). These findings suggest

that, for opioid-dependent women with BPD, 12-step groups (and not necessarily skills training) are important for maintaining treatment compliance and reducing substance use.

In summary, there are a few studies examining comparisons with placebo but they are difficult to interpret. Nevertheless, there are some important implications from these studies. First, it appears that psychodynamic techniques, such as interpretation of transference, can be integrated into DBT with good success. Second, it appears that both psychodynamic and family therapists can be taught relatively easily to be effective DBT therapists. Third, it appears that skills training may not be the active mechanism of change in DBT, and that 12-step groups might be more effective than skills groups for keeping substance-abusing borderline patients in treatment.

Comparison with Well-established, Well-delivered, Alterative Treatments
The only RCT to date that has compared an experimental treatment for BPD to an established alternative treatment has been the RCT conducted by The Personality Disorders Institute, funded in part by the Borderline Personality Disorders Research Foundation, to assess the efficacy of TFP compared with DBT and supportive psychotherapy (SPT) for patients with BPD. DBT, which has received preliminary empirical support for its effectiveness, was selected as the active comparison treatment. The putative mechanisms of change in these two treatments are conceived in very different ways. DBT is hypothesized to operate through the learning of emotion-regulation skills in the validating environment of the treatment (Lynch et al., 2006). TFP is hypothesized to operate through the integration of conflicted, affect-laden conceptions of self and others via the understanding of these working models as they are actualized in the here-and-now relationship with the therapist. SPT (Appelbaum, 1981, 2005), was used in contrast to these two active treatments as a control for attention and support.

In this study, The BPD patients were recruited from New York City and adjacent Westchester County. Ninety-eight percent of the participants were clinically referred by private practitioners, clinics, or family members. Ninety male and female patients between the ages of 18 and 50 were evaluated using structured clinical interviews, and randomized to one of the three treatment cells. To date, all treatments have been completed, but follow-up evaluations are still in progress.

There are a number of methodological strengths of this study such as the use of multiple domains of change to measure outcome, including behavioral, observer-rated, phenomenological, and structural change (i.e., attachment representations, object relations, and mentalization skills). In addition, this study included a broad range of BPD patients and not exclusively those with parasuicidality, representing the full spectrum of BPD manifestations. Further, all therapists were experienced in their respective treatment model, had practice cases prior to beginning the study, and were rated for adherence and competence in their delivery of therapy during the study. Adding to the external validity of this research, treatments were

delivered in community mental health settings, including outpatient hospitals and private offices of therapists. Results show that all three groups had significant improvement in both global and social functioning, and significant decreases in depression and anxiety. Both TFP and DBT-treated groups, but not the SPT group, showed significant improvement in suicidality, depression, anger, and global functioning. Only the TFP-treated group demonstrated significant improvements in verbal assault, direct assault, irritability (Clarkin et al., in review), and person-ality structure as assessed by narrative coherence, reflectiveness, and attachment security (Levy et al., in press).

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Accumulating evidence indicates that TFP may be an effective treatment for BPD. As more data from the RCT is assessed, we will have a better understand-ing of how the treatment performs under more stringent experimental conditions. Because the RCT better controls for unmeasured variables through randomiza-tion, offers controls for attention and support, and compares TFP to an already established, well-delivered, alterative treatment, its outcome will be a strong indicator of the treatment's efficacy and effectiveness. In addition to assessment of outcome, the RCT has also generated process-outcome studies designed to assess the hypothesized mechanisms of action in TFP that result in the changes seen in these patients (Clarkin & Levy, 2006; Levy, et al., 2006). Additionally, in the future, evaluating the long-term effectiveness through two-, three-, and five-year follow-up data is crucial to establish the long-term significance of a treatment for a chronic disorder (Westen, 2000)

SUMMARY OF RCTs

Overall, results from RCTs have found that a number of cognitive-behavioral (DBT, Schema Focused Therapy) and psychodynamic treatments (Mentalization Based Therapy and TFP) have efficacy, although outcomes are inconsistent with the exception for parasuicidality (especially for DBT in comparison to TAU and with highly parasuicidal patients). In addition, power is generally low and, although attrition has been reduced in the experimental conditions, it still remains a problem. As pointed out by Rossi (1990), low power is low power, and finding effects in low powered studies is problematic. He outlines a number of reasons for this conclusion, noting that besides the obvious reason that low power results in an inability to detect a true difference, low power can also result in false positives. Rossi (1990) points out that in low power studies, the chance of Type II errors is only slightly more than the chance of a Type I error. This is because studies with low power are susceptible to the undue influence that may be exerted by outliers. Although this issue is less so with nonparametric tests, it remains a problem and is compounded by the fact that there are no good tests of power for non-parametric tests. Finally, low power often results in an inability to test alternative hypotheses for findings. For instance, if one wanted to test for therapist effects, or patient effects, a small sample size would make it unlikely that these effects could be identified in the data and conversely more likely that an outlier could cause an

effect to be found. Generally speaking, domains of change are limited (e.g., focus on symptoms) and few studies have examined patient predictors of outcome (sans parasuicidality, inpatient status). Most importantly, thus far, few studies have investigated specific mechanisms of action or change (Clarkin & Levy, 2006; see Levy et al., in press, for an exception). Finally, given the chronicity of personality [AU: update?] disorders, none of the studies have sufficient follow-up as yet that would determine the maintenance of treatment effects and clarify the long-term course of BPD after treatment termination.

Implications for Mechanisms of Change

Although there is accumulating evidence from outcome studies suggesting the effectiveness and efficacy of a number of different treatments (Bateman & Fonagy, 1999; Clarkin et al., 2001; Koons et al., 2001; Linehan et al., 1991; Linehan et al., 1999; Stevenson & Meares, 1992, 1999; Verheul, van den Bosch et al., 2003), the probative importance of these studies for understanding a treatment's actual mechanisms of action are both indirect and limited (Garfield, 1990). Therefore, despite the support for the effectiveness and efficacy of existing treatments for borderline personality disorder, researchers are still confronted with a high degree of uncertainty about the underlying processes of change. Additionally, validation for the treatment occurs to the extent that the theoretically specified mechanisms of change are actually related to the treatments' effectiveness. It is very possible that these treatments may work due to unintended mechanisms such as typical common factors (e.g., expectancies; see Weinberger, 1995) or a specific technique factor that is essential to good outcome but not necessarily unique to anyone treatment.

Along these lines, Bateman and Fonagy (1999) suggest that essential mechanisms in the treatment of BPD are a theoretically coherent multicomponent treatment approach, a focus on relationships, considerable efforts aimed at reducing drop-out rates, and consistent application over a significant period of time. These components are consistent across studies examining MBT, DBT, TFP, SFPT, and CBT and may explain the better-than-expected results as compared to treatment-as-usual groups and studies of naturalistic follow-ups, particularly with regard to the issue of attrition from treatment. All of these treatments provide principle-based manuals and institutional supports such as ongoing supervision, not only to stress specific techniques, but also to metabolize countertransference and to minimize iatrogenic effects of therapist enactments. Additionally, each of these treatments invests considerable efforts to increase communication between different treaters (e.g., individual therapist and psychopharmacologist).

Specific questions have been raised to various aspects of these different treatments. For example, given the considerable efforts geared toward supporting therapists, one could ask, "does DBT training or supervision reduce therapist burnout?" The data, to date, suggests not (Little, 2000; Linehan et al., 2000). Little (2000) found that DBT training reduced burnout scores on the Personal

Accomplishment component of the Maslach Burnout Scale (1982), but did not reduce burnout on the Depersonalization and Emotional Exhaustion components. Linehan et al. (2000) found that the best predictor of DBT-trained therapists' burnout was patient's pre-treatment burnout.

Another question that arises is: "Are treatment contracts useful?" One of the important tactics in TFP is the use of treatment contracts, which occurs before the treatment begins. The function of the contract is to define the responsibilities of patient and therapist, protecting the therapist's ability to think clearly and reflect, provide a safe place for the patient's dynamics to unfold, set the stage for interpreting the meaning of deviations from the contract as they occur later in therapy, and provide an organizing therapeutic frame that permits therapy to become an anchor in the patient's life. The contract specifies the patient's responsibilities, such as attendance and participation, paying the fee, and reporting thoughts and feelings without censoring. The contract also specifies the therapist's responsibilities, including attending to the schedule, making every effort to understand and, when useful, comment, clarifying the limits of his/her involvement, and predicting threats to the treatment. Essentially, the treatment contract makes the expectations of the therapy explicit (Clarkin, 1996). There is some controversy regarding the value of treatment contracting. The APA guidelines recommend that therapist contract around issues of safety. Others (Sanderson, Swenson, & Bohus, 2003) have suggested that the evidence contraindicates their use and shows them to be ineffective (Kroll, 2000). However, the Kroll (2000) study was designed to determine the extent that no-suicide contracts were employed (which was found to be 57%) and, although 42% of psychiatrics who used no-suicide contracts had patients that either suicided or made a serious attempt, the design of the study does not allow for assessment of the efficacy of no-suicide contracts. Other data suggests the utility to contracting around self-destructive behavior and treatment threats (Yeomans et al., 1994; Smith et al., 1995; Clarkin et al., 2001; Levy et al., 2005; Clarkin et al., 2005). For example, Yeomans and colleagues (Yeomans et al., 1994) in a pre-post study of 36 patients with borderline personality disorder found that the quality of the therapist's presentation and handling of the patient's response to the treatment contract correlated with treatment alliance and the length of treatment. In addition, in our earlier work on TFP (Smith et al., 1995), when we did not stress treatment contracting, our drop-out rates were high (31% and 36% at the three month and six month marks of treatment). However, based on the findings of Yeomans et al. (1994), Kernberg and colleagues further systematized and stressed the importance of the treatment contract and in later studies (Clarkin et al., 2001; Levy et al., 2005; Clarkin et al., 2005) our group found lower rates of drop-out (19%, 13%, and 25%) over a year-long period of treatment. We suggest, that these findings taken together suggest that sensitively but explicitly negotiated treatment contracts may have one of the desired effects: resulting in less drop-out and longer treatments. Future research will need to address the issue of treatment contracts more directly, particularly testing the effects on parasuicidality and suicidality.

Another question that arises with regard to DBT concerns the evidence for the skills group as a mechanism of change in DBT. Linehan suggests that the skills group is a key mechanism of change (Koerner & Linehan, 2000; Linehan, 1993; Lynch et al., 2006). Patients and therapist also view skills groups as critical for improvement (Araminta, 2000; Cunningham et al., 2004; Miller et al., 2000; Perseius, Ojehagen, Ekdahl, Asberg, & Samuelsson, 2003). However, the data available to date would suggests otherwise. Linehan et al. (2002) compared standard DBT to Comprehensive Validation Therapy with a 12-step program and found similar outcomes in the two treatments, suggesting that validation and not skills training may be the active ingredient in DBT for substance abusing BPD patients. Contrary to the recommendations of Linehan (1993), Turner modified DBT skills by removing them from the traditional group format and incorporating them into the briefer individual sessions (as well as incorporating psychodynamic techniques). Turner (2000) also provided patients in both the experimental and control conditions with six sessions of a modified DBT skills group. Turner found that the psychodynamically and skills modified DBT was more effective the client centered therapy with modified skills groups. This finding suggests that skills groups can be integrated into individual sessions and with psychodynamic techniques. The only study we could finding looking at the acquisition of skills was a dissertation by Puerling (2000). She found increases in skill usage over time but failed to show any relationship between changes in skills and outcome.

Is there evidence that increased reflective function (RF) is the mechanism of change in MBT? Although it is tempting to hypothesize that RF is the mechanisms of change in MBT and that the increases in good outcome continued after treatment termination due to change In RF, there is no direct evidence to suggest that RF changes in MBT. Indirectly, findings from Bateman and Fonagy's (2001) follow-up, in which they find continued improvement in their MBT treated patients, suggests some internal change akin to RF may have taken place. There is evidence, however, that RF changes in Kernberg's TFP treatment (Levy et al., in press).   AU: Update

What patient variables predict outcome for BPD? There is surprisingly little data about patient characteristics as predictors of outcome in the treatment of BPD. Fonagy et al. (1996) found that pre-treatment RF did not predict outcome for 85 outpatients with BPD; however, attachment status did. Those patients with dismissive attachment, as compared with those with enmeshed preoccupied attachment, showed significantly greater increases in GAF scores. Levy-Mack, Jeglic, Wenzel, Brown, & Beck (2005) examined the relation between patient attitude toward treatment and outcome in a sample of patients seeking CBT for BPD. Positive attitude toward treatment, as opposed to negative attitude toward treatment, were more likely to experience greater decreases in the number of BPD and depressive symptoms despite attending fewer therapy sessions than the negative attitude. These results suggest that techniques designed to enhance patients' attitudes toward treatment could increase the likelihood of benefiting from treatment. Linehan et al. (2000) found that patient pre-treatment burnout

predicted therapist burnout at 4-months into treatment. Yeomans et al. (1994) found that impulsivity was negatively related to the length of treatment. Smith et al. (1995) found that patient hostility and younger age predicted drop-out from treatment. What therapist's factors predict outcome in the treatment of BPD? Linehan et al. (2000) found that high expectancy for therapeutic success leaves therapists vulnerable to increased emotional exhaustion at a later point.

In sum, little is known of the mechanisms by which treatments for BPD actually work or what actually happens to the patient that results in change. Preliminary evidence suggests that theoretically coherent, relationship focused treatments that place considerable efforts on reducing drop-out, communication with auxiliary treaters, and provide ongoing supervision of therapists are important factors. There is some evidence that skills groups may not be the mechanism of action in DBT and that increasing the patients capacity to think about mental states may be the mechanisms of action in psychodynamic treatments. Regarding patient and therapist factors, less is known, but hostility, impulsivity, and young age appear to be risk factors for a higher client drop-out rate.

An Integration of the Evidence

Linehan's (Linehan et al., 1991) seminal randomized clinical trial of DBT was a breakthrough for the research on BPD; the treatment has quickly gained popular acceptance. A number of managed care companies now define special benefits for DBT. Several state departments of mental health (Illinois, Connecticut, Massachusetts, New Hampshire, North Carolina, and Maine) have now enthusiastically endorsed and subsidized DBT as the treatment of choice for BPD or have mandated DBT training for state employees working with seriously disturbed patients. In Massachusetts, former DBT patients can now be reimbursed for coaching current DBT patients. Hundreds of marketing, seminars, and training programs in DBT are provided for inpatient and outpatient clinics, correctional institutes, and community treatment centers. Certainly, Linehan's efforts to develop, examine, and given the seriousness of BPD, to disseminate DBT are laudable. Her 1991 study was seminal and changed the face of psychotherapy research, however, concerns have been raised that the dissemination of DBT has exceeded the evidence base particularly with regard to state legislation and insurance reimbursements (Corrigan, 2001; Scheel, 2000; Smith & Peck, 2004; Westen, 2000). There is no doubt that the empirical base for DBT, in terms of the sheer number of studies, is stronger than for any other treatment. However, the actual findings themselves may not be as strong as developing folklore. The Cochrane Report (Binks, Fenton, McCarthy, Lee, Adams, & Duggan, 2006) meta-analytic findings suggest that although some of the problems, particularly parasuicidality, may be amenable to DBT, it remains "experimental and the studies are too few and small to inspire full confidence in their results." In addition, there are a number of other treatments, including cognitive-behavioral and psychodynamic based treatments, which warrant serious consideration.

Viewing the BPD treatment literature from a broad perspective, there is support from various levels of scientific rigor for the effectiveness (and in some cases, efficacy) of psychodynamic, interpersonal, cognitive, and cognitive-behavioral psychotherapies for treating BPD. In addition, evidence suggests the combination of individual psychotherapy with skills-based, psychoeducational, and family therapy groups. Although DBT (Linehan, 1993) has been the most extensively studied treatment for BPD in RCTs, there is emerging evidence for the effectiveness and efficacy of psychodynamically oriented treatments such as MBT (Bateman & Fonagy, 2004) and TFP (Clarkin et al., in review; Levy et al., 2006), cognitive (Brown et al., 2004) and cognitive-analytic treatments (Ryle & Golynkina, 2000), and interpersonal psychotherapy (Meares et al., 1999). In addition, there is preliminary evidence to suggest that DBT might be more efficacious for highly parasuicidal BPD patients than it is for those who are less parasuicidal (Verheul et al., 2003), and that TFP might be more efficacious than DBT in generating changes in personality structure (Levy et al., 2006). Further research examining the factors that moderate outcome in the treatment of BPD can help to verify or refute these hypotheses. In addition, there is evidence to suggest that psychodynamic therapists can learn and apply DBT well, that psycho-dynamic techniques can be integrated into DBT, and that DBT skills groups can be modified and even incorporated into individual sessions. These issues warrant further study.

With the heterogeneity of BPD presentations, the question should not be simply "which treatment is most efficacious for treating BPD?", but rather, as Gordon Paul (1967) suggested "What treatment, by whom, is most effective for this individual with that specific problem, and under which set of circumstances?" (p. 111). We would also add "and by what mechanisms?" The maximization of treatment effects depends upon the examination of mechanisms of change, both at the level of changes within the patient as well as at the level of the specific techniques that affect such changes (Levy et al., 2006).

It is hoped that this chapter has demonstrated that, although RCTs are important in the evaluation of psychotherapy for BPD, they can be restricted in their explanatory power, external validity, and ability to identify mechanisms of change. Limitations of existing RCTs include the lack of adherence and competence ratings (Linehan et al., 1991; Bateman & Fonagy, 1999). Without knowing which techniques are prescribed and proscribed by the experimental treatment and whether or not therapists adequately followed the principles and techniques of a given therapy, inferences regarding the components of therapy that actually lead to change cannot be made. Future studies of psychotherapy for BPD could be improved by utilizing treatment manuals for each treatment condition, additional efforts to maintain the integrity of each treatment (e.g., evaluating adherence, competence, and expectancies of therapists in both experimental and control conditions), measurement of multiple domains of outcome (i.e., structural and interpersonal change, as well as symptom reduction), long-term follow-up evaluations, and examination of moderating and mediating factors in treatment

outcome. Multiple assessment points during treatment studies are especially important for evaluating trajectories and mechanisms of change in psychotherapy for BPD.

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AU: Was this presented at a meeting on this date? If so, where? THIS WAS A SUMMARY (FOUND ON WEB) OF A WORKSHOP HELD AT NIMH IN ROCKVILLE, MD; CITED IN TEXT AS NIMH WORKSHOP SUMMARY, 2002

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