Running Head: DBT THERAPIST ADHERENCE IN BITE SUPERVISION

AN IN-DEPTH EXPLORATION OF DBT THERAPIST ADHERENCE DURING "BUG-IN-THE-EYE" LIVE SUPERVISION

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ABSTRACT

Therapist adherence is a necessary prerequisite to delivering evidence-based treatments competently. While therapist adherence has been identified as an important construct to assess in research trials, little has been written about the methods used to train therapists to adherence or how therapists' ability to self-assess adherence compares to actual adherence to a treatment model. Within dialectical behavior therapy (DBT), therapist adherence is especially important because of the complex treatment being delivered and the high-risk population being treated. Live supervision strategies have been developed to address problems that occur with regular, between-session supervision. The implementation of "Bug-in-the-Eye" (BITE) supervision, a live supervision strategy providing visual feedback to the therapist through the use of video-conferencing technology, was utilized in a DBT training clinic to determine the effects of live supervision on student therapist adherence to DBT. In this dissertation, an in-depth examination of one therapist-patient dyad that participated in a pilot study of BITE is presented. Differences between expert adherence scores and therapist self-assessment adherence scores to both global DBT adherence and adherence to the subcategory of dialectical strategies were examined. Additionally, feasibility and acceptability of BITE supervision to the student therapist were measured. Expert coder adherence scores indicate that the student therapist began the protocol already adherent to DBT, and the therapist remained adherent throughout the trial. Self-assessed adherence scores did not significantly differ from expert-coded adherence scores. The therapist found the use of BITE supervision both acceptable and feasible within the DBT

training clinic. Session transcripts and copies of BITE feedback are provided in a narrative form to provide an in-depth look at how BITE supervision was implemented. This study adds to the existing literature that finds BITE supervision feasible and acceptable to therapists. The therapist's adherence to DBT throughout this study suggests that BITE supervision might have a greater effect on therapist adherence among more novice therapists. Future research should focus on implementing BITE supervision in DBT training clinics with a larger and more diverse therapist sample.

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DBT: Overview and Empirical Support

Dialectical behavior therapy (DBT) was originally developed by Linehan to treat women with suicidal behaviors and borderline personality disorder (BPD). DBT is a behavioral treatment with a dialectical philosophy that informs the conceptualization and treatment of patients. The dialectical perspective sees reality as holistic, interrelated, in constant contrast, and in constant change. In DBT, the dialectical stance provides therapists and patients with a framework to see both sides of the truth in all situations and to work towards a synthesis to help the patient both accept reality as it is and simultaneously make changes in her life (Koerner, 2012; Linehan, 1993). The DBT hierarchy frames the structure of treatment, first prioritizing life-interfering behaviors, then treatment-interfering and quality-of-life interfering behaviors in Stage 1 of treatment. Therapists utilize the full set of DBT strategies, including dialectical strategies, to help patients work towards "building a life worth living" (Linehan, 1993).

Dialectical strategies in DBT arise from the dialectical philosophy that views reality as holistic and ever-changing. This philosophy underlies DBT, and the main dialectic that permeates the treatment is that of acceptance and change: we ask patients to make changes in their lives, as is similar with most cognitive-behavioral therapies, and we also ask patients to simultaneously accept the reality of their lives as it is in the current moment (Linehan, 1993). DBT therapists attend to dialectics in two main ways; highlighting dialectical tensions within the therapeutic relationship and also teaching and modeling dialectical behavior. The first task

requires DBT therapists to remain quick on their feet to balance out the patient's polarized or rigid behavior in session (Linehan uses metaphors like a teeter-totter and ballroom dancing to illustrate this). The second goal of modeling dialectical behavior is achieved by the therapist verbalizing tensions without choosing sides or being extreme herself: this is achieved by using "both-and" statements, highlighting the middle path of two extreme behaviors, and teaching a balanced set of skills that help patients both regulate and tolerate emotional experiencing. A specific set of strategies is described in the DBT manual to assist therapists in remaining dialectical: entering the paradox, using metaphor, being devil's advocate, extending, activating "wise mind", making lemonade out of lemons, and allowing for natural change (Linehan, 1993).

Since its development in the 1980's, DBT has gained significant empirical support in randomized controlled trails (RCTs). DBT has been found to be effective in reducing suicidal and self-harming behaviors, decreasing psychiatric hospitalizations, decreasing treatment dropout rates, decreasing depressive symptoms, and treating other populations such as substance abusers, eating disordered patients, and patients in inpatient settings (Linehan et al. 1991; Linehan, Heard, & Armstrong, 1993; Linehan, et al., 2006; Lynch et al. 2007).

While there is an abundance of empirical evidence supporting the efficacy of DBT treatment, there is little written about how to train therapists to adherence in DBT. Therapists in many of Linehan's early DBT research trials are graduate students learning to implement DBT under her supervision. However, the methods used to train graduate student therapists to adherence are not explicitly outlined.

This gap in the literature is especially concerning within DBT, as the treatment poses a number of additional challenges to training graduate students learning DBT for the first time. DBT therapists treat an underserved population of individuals who are high-risk, suicidal, and multidisordered (Lungu, Gonzalez, & Linehan, 2012). The DBT model addresses the challenges of working with severe patients by providing a structured framework that includes a target hierarchy, multiple stages of treatment, and dialectical strategies to balance acceptance and change. DBT is a principle-based treatment, meaning therapists flexibly utilize any number of strategies based on the context of a session. Adherence, therefore, requires therapists to have a thorough understanding of the theoretical underpinnings of the treatment and also have a firm grasp on all treatment strategies in order to make decisions that would be considered DBT adherent. One question that has not yet been addressed is how student therapists can best be trained to adherence in delivering DBT to a difficult population.

Therapist Adherence in Psychotherapy Research and Practice

Therapist adherence can be defined as the extent to which a therapist uses interventions and approaches prescribed by the treatment manual (Waltz, Addis, Koerner, & Jacobsen, 1993). Definitions of treatment adherence, competence, and fidelity have been used inconsistently throughout the literature, and therefore it is important to define each construct. Adherence refers to how closely one follows the prescribed treatment manual, while competence assumes adherence and also refers to the skill necessary to flexibly adjust treatment interventions based on the

conceptualization of the individual patient and the problems arising in the moment (Kanantzis, 2003; Persons, 1991). Treatment fidelity, also known as treatment integrity, refers to the extent to which a treatment is implemented as intended, which includes components of adherence, competence, and treatment differentiation (Perepletchikova, Treat, & Kazdin, 2007). While there are overlapping principles between these constructs, for the purpose of this paper, the focus will be on adherence. Adherence is a necessary prerequisite to competence, so investigating methods to increase therapist adherence is a first step towards increasing therapist competence. Therapist competence in delivering evidence-based treatments (EBTs) has been linked to good patient outcomes (Brosan, Reynolds, & Moore, 2008; Strunk, Brotman, DeRubeis, & Hollon, 2010), which highlights the importance of therapist adherence as a basis for delivering psychological treatment.

Therapist adherence has been measured to varying degrees in psychotherapy research. Therapist adherence has gained attention as EBTs have been disseminated into clinical practice outside of rigorously controlled RCTs (Brosan, Reynolds, & Moore, 2008; McManus et al., 2012). The way in which therapist adherence is measured in RCTs has implications for implementing EBTs in other settings like community practices and graduate training programs and can be informative as to how to train therapists to adherence in these settings. Therefore, an investigation of the methods by which therapist adherence is measured in research is warranted. A meta-analysis conduced by Roth, Pilling, and Turner (2010) reviewed supervision and training in 27 EBT research trials and found that

while most reported monitoring adherence, only seven trials used a standardized adherence measure. Training methods used in the trials most often included a mix of didactic teaching, video case examples, role-plays, and learning from the manual. Of the 21 studies that included training, 16 required therapists to demonstrate competence prior to participating in the trial, although the methods used to assess competence were not detailed. Therapists in a majority of the trials were professionals with previous experience delivering the specified treatment, and their training was brief. This analysis provides little information that addresses the question of how to train therapists to deliver a treatment adherently with which they have no prior experience.

The lack of a consistent method to train therapists to adherence poses a problem for therapists-in-training outside of research settings who do not have previous experience in a treatment and who have less training resources than in RCTs. Rather than depending on a tested method, therapists often rely on their own assessment of how well they are delivering treatment. Self-assessment informs therapists of their strengths and weaknesses, and can serve as an indicator that further training should be sought out to increase clinical skill in certain areas. However, results from a number of studies highlight the inaccuracy of therapist self-assessment as it relates to treatment delivery and adherence. Caroll, Martino, & Rounsaville (2010) compared therapist self-assessments with independent raters' observations in a series of research trials training community therapists to deliver evidence-based addictions treatment. Findings from this study indicate that while therapists reported that their delivery of "standard treatment" incorporated high

levels of evidence-based interventions, independent raters found evidence-based interventions in a rate of less than 5% of observed sessions. Additionally, therapists overestimated the time spent on evidence-based interventions in each session as compared with independent raters' observations. Other studies have also found that therapists overestimate their adherence and competence (Brosan, Reynolds, & Moore, 2008; Kruger & Dunning, 1999), while one study found that therapists underestimate their level of competence (McManus et. al., 2011).

There is a limited body of research that focuses on therapist adherence outside of research trial settings. One study looked at the effects of three training methods on therapist adherence among 78 community-based clinicians (Sholomskas et al., 2005). Results indicated that therapists whose casework was supervised in addition to reviewing a manual and attending a didactic seminar were assessed as having higher scores on the Yale Adherence Competence Scale (YACS) than therapists assigned to the seminar plus manual review or manual review alone. Other studies have examined methods to train community therapists in EBTs, however adherence to a treatment model was not a measure included in studies. For example, Herschell et al (2010) wrote a review article looking at various training methods used in implementation studies, and while the authors pointed to several measures of outcome in various studies (mastery of skills, behavior change in session, patient outcome), therapist adherence was not included in the review. It seems that within the large body of literature that addresses therapist training in EBTs, there is little written about therapist adherence to treatment models or how adherence might be measured in settings other than large RCTs.

Therapist Adherence within DBT Research

In line with the increasing emphasis on adherence to treatment in the implementation of EBTs (Becker & Stirman, 2011; Shoenwald et al., 2011), a growing number of DBT trials include a measure of therapist adherence to demonstrate that clinicians are implementing DBT the way it was intended (Linehan, et al., 2006; McMain et al., 2009; Pistorello et al., 2012). In each of these studies, DBT adherence was assessed by independent raters who had reached reliability using a DBT adherence measure developed by Marsha Linehan. A random selection of video and audiotapes were coded for adherence to DBT throughout the trials. Studies that included an assessment of therapist adherence found that when DBT was delivered by adherent therapists, participants demonstrated positive outcomes like reduced frequency and severity of non-suicidal self-injury (McMain et al., 2009), reduced number of suicide attempts, hospitalizations, and treatment dropouts (Linehan et al., 2006; Pistorello et al., 2012), and significant improvements in social adjustment (Pistorello et al., 2012).

Although therapist adherence has been assessed in a number of DBT research trials, reports of the methods used to train DBT therapists to adherence have been variable. In the Linehan et al. (2006) study comparing DBT to community treatment by experts, DBT therapists underwent training in a 45-hour DBT seminar followed by supervised practice and were hired once 6 out of 8 consecutive training case sessions were rated as adherent using the DBT Global Rating Scale (Linehan, unpublished work, 2003). Other studies reported more vague training methods, including 30 hours of training according to the DBT manual (Pistorello et al., 2012)

and intensive training and workshops in addition to regular supervision by experts (Linehan et al., 2006). One study looked at three different methods to train therapists in DBT skills—reading the manual, an online learning module, or an in-person workshop. While results indicated that all three methods increased therapists' capabilities to apply knowledge to clinical practice and that online training increased therapist knowledge of skills more than the other two methods, there was no measure of therapist adherence to the treatment model (Dimeff et al., 2009).

One way that concerns about training methods within DBT have been addressed is the development of guidelines for establishing DBT graduate training clinics (Lungu, Rodriguez Gonzalez, & Linehan, 2012). Requisite components of these training programs include academic seminars, opportunities to teach DBT in the community, and clinical practicum. Student participation in the clinical practicum includes involvement in all modes of DBT: individual therapy, skills group, phone coaching, and consultation team. A critical component of the clinical practicum is supervision; students are supervised and at times observed by a senior DBT therapist (Lungu, Rodriguez Gonzalez, & Linehan, 2012). While didactic seminars teach students the theoretical foundations of DBT, supervision provides student therapists with the chance to demonstrate the utilization of treatment strategies and to get feedback from an expert DBT therapist on their delivery of the treatment. Supervision, then, is one component of training that can enhance therapist adherence.

Supervision in Clinical Practice

Supervision has been defined as "the formal provision, by approved supervisors, of a relationship-based education training that is work-focused and which manages, supports, develops, and evaluates the work of colleagues," (Milne, 2009). Supervision in clinical psychology aims to enhance the capabilities of supervisees and also provide quality assurance of the supervisee's clinical work with patients (Britt & Gleaves, 2011). Goals of supervision can vary depending on the orientation of the treatment model. CBT supervision tends to be didactic with the main goal being to teach therapists to adopt a CBT philosophy and learn specific interventions (Pretorius, 2006). Other supervision models emphasize interpersonal and experiential elements (Pretorius, 2006), focusing more on therapist emotions towards patients as part of the therapeutic process. The format of usual supervision varies in frequency and duration (Pretorius, 2006), but in general takes place once a week between therapy sessions for approximately one hour.

One goal in supervision within EBTs is to enhance therapist adherence to the specified treatment model. A number of studies have found correlations between supervision and therapist adherence. Sholomaskas (2005) found that therapists assigned to a training condition that included ongoing supervision had the highest level of adherence to treatment above the other two conditions that included manual review plus a seminar or manual review alone. Another study implementing Multisystemic Therapy (MST), a family-based EBT, found that supervision for MST clinicians had a positive impact on adherence to treatment as well as patient outcomes (Shoenwald, Sheidow, & Chapman, 2009).

In traditional supervision, a supervisor generally relies on the supervisee's verbal report of previous sessions. A number of problems can arise when relying on verbal report alone for supervision purposes. For example, a supervisee's verbal report may not be accurate due to inexperience as a therapist or hesitancy to be honest with her supervisor (Riechelt et al, 2009; Yourman & Farber, 1996). Verbal report is also not adequate on its own to assess treatment adherence. This is especially problematic for therapists in training who are delivering EBTs with efficacy based on research trials with strict adherence to a model.

One way that supervisors have attempted to enhance adherence of student's delivery of treatment has been to implement direct observation methods like watching videotapes or listening to audiotapes of previous sessions. Still, it has been found that supervisors watching segments of videotapes or watching full sessions once in awhile is not an adequate sample of observed sessions to assess therapist adherence to a treatment model (Weck, Grikscheit, Höfling, & Stangier, 2014). Additionally, watching videotapes does little to address problems as they arise in the therapy session. Traditional supervision occurs between therapy sessions and problems discussed in supervision are related to problems that occurred in the previous session. This poses a unique challenge when working with patients with more complex problems, as a new problem may arise in the following session and feedback from the previous supervision becomes irrelevant.

Supervision in DBT

Traditional supervision can only in part address supervisory challenges for DBT therapists-in-training. As noted earlier, verbal report is not always an accurate depiction of what occurred in session (Riechelt et al, 2009; Yourman & Farber, 1996), and even watching videotapes misses the opportunity to help therapists implement strategies more effectively in-the-moment as the problems arise in session. While these downfalls likely affect many therapists learning various treatments, they may be especially noteworthy within the context of DBT supervision. First, the complexity of DBT requires that therapists be adept at utilizing behavioral modification strategies, therapist stylistic strategies, acceptance strategies, and others as needed during any given therapy session. Remaining dialectical can be especially challenging for DBT therapists in training who are still familiarizing themselves with the various DBT strategies and developing their own dialectical stance. Linehan notes that many treatment impasses result from a therapist's failure to balance acceptance and change treatment strategies, and a therapist's rigidly holding on to one side of a polarity creates more distance and tension within the therapeutic relationship (Linehan, 1993). Remaining dialectical requires a therapist to be on the constant lookout for tensions in treatment and in the patient's life, and to be able to present both sides of the polarity and work to develop syntheses. There is a question whether supervisor feedback would enhance the therapist's ability to maintain a dialectical stance in sessions. There has been very little written about supervision in DBT and no evidence has been gathered to

support the hypothesis that DBT supervision increases dialectical behavior in sessions.

Another, perhaps more important reason why adherence is so vital in DBT has to do with the high-risk nature of the patient population. DBT is a treatment found efficacious for suicidal and self-harming individuals, and DBT therapists in clinical settings often are working with individuals presenting to treatment with a number of high-risk behaviors. As noted in the DBT manual, working with this high-risk population requires a certain amount of speed, flexibility, and commitment from the therapist (Linehan, 1993). DBT has been found to be effective in reducing suicidality, so a goal of DBT training should be to help therapists become more adherent to DBT treatment. Ideally, supervision for DBT therapists-in-training would include assessment of therapist adherence to the model.

"Bug-in-the-Eye" Supervision

Live supervision methods have been developed to address concerns with traditional supervision. Some examples of live supervision methods include supervisors using a one-way mirror to directly observe sessions, supervisors knocking on the door or calling into the session to provide feedback during a session they are observing, and utilizing "bug-in-the-ear"—a technique that allows supervisors to provide feedback to the therapist through a listening device placed in the therapist's ear. While these strategies have been effective in providing live supervision and direct feedback, they have been reported to create interruption and distraction to the therapy session (Champe & Kleist, 2003; Jacob, Weck, & Bohus,

2013; Klitzke & Lombardo, 1991; Mauzey & Erdman, 1997). "Bug-in-the-eye" (BITE) supervision is another form of live supervision that provides the therapist with visual feedback (as opposed to audio feedback in "bug-in-the-ear") during the therapy session. A typical BITE setup includes a supervisor observing a therapy session live through the use of video-conferencing technology. A computer and webcam are set up in the therapy room and the supervisor can see and hear the session as it occurs on her own computer. The supervisor then types feedback to the therapist into a word document on her computer that is displayed on a computer screen in the therapy room seen only by the therapist. The therapist can then incorporate typed feedback into the session as she chooses. BITE has been found to be less invasive as compared with other live supervision strategies mainly because the therapist has the option of not attending to the visual feedback provided by the supervisor (Jacob, Weck, & Bohus, 2013; Klitzke & Lombardo, 1991). BITE supervision also addresses the disadvantages of traditional supervision, including inaccurate verbal report and delayed supervisor feedback. BITE supervision can address patient problems as they are brought up in session and can help accelerate knowledge acquisition of treatment strategies for student therapists. This could lead to more effective training for therapists and more effective treatment for patients.

Studies that have implemented BITE supervision have found the method to be acceptable and satisfactory to both therapists and patients. Therapist reports from Klitzke and Lombardo's study (1991) comparing BITE supervision with "bug-in-the-ear" supervision indicated that BITE supervision was less distracted and

enhanced therapist self-confidence in session performance more so than "bug-in-the-ear" supervision. In another study, Rousmaniere and Frederickson (2013) used Remote Live Supervision (RLS; the same set-up as BITE) to supervise graduate students in Intensive Short-Term Dynamic Therapy. All nine patients involved in RLS reported satisfaction with the method, and minimal distraction was reported by patients as a result of the set-up. Scherl and Haley (2000) also implemented BITE supervision (called computer monitor supervision in this study) and found similar reports of satisfaction among therapists.

To date, only a handful of studies have assessed how BITE affects therapist competence. Weck et al. (2015) conducted a randomized controlled trial examining the effects of BITE on therapeutic alliance and therapist competence in CBT. Therapists in the study were trainees in psychology doctoral programs, randomly assigned to either a BITE condition or Delayed Video-Based (DVB) condition. They found that treatment conducted with BITE supervision was associated with stronger therapeutic alliance and significantly higher levels of competence among trainee therapists as compared with the DVB group. However, differences in therapist competence and therapeutic alliance already existed after the first session, suggesting that pre-treatment differences between therapists may have accounted for BITE's superiority in the study.

One study has looked at the effects of BITE on therapist competence in a DBT training clinic. Carmel et al. (2015) implemented BITE group supervision with eight psychiatry residents learning DBT. The trainees were randomized to either supervision as usual (SAU) or BITE group supervision during a one-year elective.

Results from the study found that trainees in the BITE group supervision performed significantly better on a post-supervision case conceptualization task as compared with SAU residents, indicating that BITE supervision increased therapist competency more so than SAU amongst trainees learning DBT. Additionally, BITE was considered feasible and acceptable among the trainees, adding to the literature that suggests BITE supervision is considered feasible and acceptable to therapists.

There is a growing body of evidence suggesting that BITE is satisfactory among therapists and patients. Additionally, a number of studies have begun to look at the effects of BITE supervision on therapist competence. Despite these advances, there has not yet been a study looking at the effects of BITE supervision on therapist adherence to DBT working with a high-risk, complex treatment population.

BITE Supervision at DBT-RU

The Dialectical Behavior Therapy Clinic at Rutgers University (DBT-RU) provides comprehensive DBT—comprised of individual therapy, group skills training, as-needed phone coaching, and therapist consultation team—to individuals in the community and is delivered by clinical psychology doctoral students. In addition to all components of comprehensive DBT, therapists at DBT-RU participate in weekly individual supervision by a licensed psychologist and DBT expert, as well as a weekly seminar covering topics such as case conceptualization and practicing DBT strategies.

Given the unique set of supervisory challenges that arise in DBT training clinics, a pilot single case experimental design (ABA) study was developed to test

the effects of BITE supervision on student adherence to the DBT model. BITE supervision eliminates the problem of inaccurate verbal report in traditional supervision and also provides the therapist with direct feedback in session in order to address problems as they arise. During the pilot study, three therapist-patient dyads participated in a series of 12-16 sessions that were coded for DBT adherence by an independent rater. BITE supervision was implemented for 4-6 consecutive sessions within this period of time. Adherence scores obtained for each pair were analyzed in order to determine what effect BITE supervision had on therapist adherence, and whether changes in adherence made during BITE were maintained after BITE was removed. DBT adherence was measured using the DBT Global Rating Scale (Linehan, 2003). The measure provides a score for overall adherence to DBT as well as scores for adherence to each sub-category of DBT strategies.

Aims and Hypotheses

The aim of the current study is to present a more in-depth examination of one of the three patient-therapist pairs involved in the pilot study "The Effects of 'Bug-in-the-Eye' (BITE) Supervision on Therapist Adherence in a DBT Training Clinic." In addition to determining whether changes in DBT adherence are gained and maintained during and after BITE supervision, the current study aims to compare student therapist self-assessed adherence scores to expert coded adherence scores. Additionally, the study aims to look at the use of dialectical strategies and explore any changes in adherence to this set of strategies during the BITE protocol. In addition to looking at therapist adherence scores, this study will also focus on the experience of the student therapist throughout the protocol, using transcripts from BITE feedback and self-report data from an acceptability and feasibility questionnaire to highlight the effects of BITE on the therapist's experience delivering DBT.

Based on previous research looking at therapist self-assessment of adherence (Brosan, Reynolds, & Moore, 2008; Kruger & Dunning, 1999), it is hypothesized that student therapist self-assessment scores of DBT adherence will be higher than expert coder's DBT adherence scores. It is also hypothesized that the student therapist will receive a higher score on dialectical strategies for BITE sessions than baseline sessions. It is also expected that the increase in dialectical strategy use during BITE sessions will be maintained once BITE is removed, as it relates to the student therapist gaining practice in thinking and acting dialectically during BITE sessions.

Method

Participants

The patient participant was enrolled in the Dialectical Behavior Therapy Program (DBT-RU) from May 2014-present. During the time of her treatment, all DBT-RU participants were enrolled in a study tested the feasibility of using a DBT skills mobile phone application as a supplement to DBT therapist phone coaching. Inclusion criteria for participation in the study include: a DSM-IV-TR diagnosis of borderline personality disorder (SCID-II), a history of at least one suicide attempt or episode of self-injury in the past 6 months and a second attempt or self-injury episode within the past 5 years, must be 18-60 years old, lives within commuting distance of Rutgers University (<45 minutes away), has in iPhone with a data plan or is willing to carry an iTouch for the duration of the study, agrees to take part in all assessments, videotaping/audiotaping procedures, and agrees to discontinue other types of psychotherapy. Exclusion criteria for the study include: mental health problems that require services that can not be provided by DBT-RU (for example, schizophrenia or other psychotic symptoms not managed by medication, life-threatening anorexia), non-English speaking, an indication that the patient had an IQ of 70 or below, a court order to treatment, greater than 6 months of prior experience receiving comprehensive DBT treatment, or an inability to understand or sign consent forms.

The participant was one of three patients enrolled in the additional protocol, "A Pilot Study of the Effects of 'Bug-in-the-Eye' (BITE) Supervision on Therapist Adherence in a DBT Training Clinic". Participation in the BITE protocol required the

patient to sign an additional consent form agreeing to the following additional procedures: audio recording sessions using a digital audio recorder, therapist adherence coding of sessions done by an independent rater, and six sessions utilizing BITE protocol in which a supervisor watches the session and provides feedback to the therapist using a computer and webcam set up in the therapy room. Eligibility for the larger study was determined through an intake assessment that was conducted by clinical psychology doctoral students. Once the patient was considered eligible for treatment, she was assigned to a graduate student therapist to receive six months of standard DBT that includes once-weekly individual sessions, once-weekly skills group, and as-needed phone coaching from her therapist. Additionally, the patient was provided with a DBT mobile skills app on her iPhone to use as needed to supplement therapist phone coaching. During her first session, the BITE protocol was explained to her and she was asked to participate. The following session, she consented to participate in the additional protocol.

The patient is a 24-year-old Caucasian female who graduated college with a Bachelor's degree and had most recently been unemployed for six months. She recently moved home with her mother and sister after two suicide attempts that occurred after a period of functional decline that resulted in her losing her job and housing in Washington, DC. She met criteria for Borderline Personality Disorder, as evidenced by a pervasive history of frantic efforts to avoid abandonment, unstable relationships, identity disturbance including drastic changes in religious beliefs, impulsivity including unsafe driving and unsafe sex, recurrent suicidal behavior

including a past history of cutting and two recent suicide attempts, affective lability including periods of intense anxiety and sadness, chronic feelings of emptiness, and difficulty controlling anger as evidenced by screaming at family members and throwing things. She also met criteria for the following DSM-IV-TR Axis I disorders: Generalized Anxiety Disorder, Past Major Depressive Disorder, past Cannabis Dependence, past Amphetamine Dependence, and past Eating Disorder Not Otherwise Specified. Her goals for treatment included reducing suicidality, decreasing fighting with her family, increasing participation in vocational activities including getting a job and/or a volunteer position, increasing social contact with others, and decreasing reactivity and increasing tolerance to emotions such as shame and anger.

The therapist in this study was a masters level clinical psychology doctoral student. The supervisor, who was the clinic director of DBT-RU, was a licensed clinical psychologist and an expert DBT therapist. The independent adherence coder was trained to reliability on DBT and was not affiliated with the DBT-RU clinic or Rutgers University. The independent adherence coder was blind to the study design and therefore did not know that BITE was being used during some of the sessions. In addition, the therapist was blind to adherence scores throughout the BITE protocol so as not to be influenced by the scores. The therapist remained blind until after the completion of the "DBT Self-Assessment Adherence Scale" of all sessions involved in the protocol.

Procedure

This study utilized a single-case experimental design (SCED) to examine differences between expert adherence scores and therapist self-assessment adherence scores during the DBT-RU BITE pilot study. SCED methodology assesses the effectiveness of an intervention by observing changes in a target behavior (in this case, a DBT Adherence score) for each individual when the intervention is present compared to when it is absent. This study utilized an ABA design: a baseline period ("A"), during which time a stable measure of the target behavior was taken, followed by an intervention period ("B") and data was collected on the effects of the intervention on the target behavior. Then the intervention was removed and data was collected for a period of time ("A") to determine if changes in the target behavior that occurred during the intervention phase returned to baseline or were maintained. This methodology was chosen for this study for a number of reasons. First, testing a novel intervention with just a few participants rules out other designs that require a greater number of participants in order to have adequate statistical power (Rizvi & Nock, 2008). Secondly, SCED allows for a more comprehensive assessment of change within the individual and looks at variability within the individual rather than a final average score, which may not accurately reflect change during the intervention. While there is a concern that withdrawing an intervention that is demonstrating positive effects is unethical, the intervention being utilized in this study likely does not put patients at greater risk when it is withdrawn because it returns to standard supervision.

The procedure for the BITE pilot study employed a single subject ABA design in which 3 therapist-patient dyads participated in the use of BITE supervision. The current study focused on one patient-therapist dyad. The pair first completed a series of sessions with usual supervision ("supervision as usual", SAU), which is defined for the purpose of this study as 45-minute face-to-face supervision between sessions that include the therapist's verbal report of the previous session as well as 10-15 minutes of watching the session's video as needed. Sessions during this phase of the protocol were rated on the DBT Adherence Scale by an off-site trained adherence coder and scores were sent back within one week to the supervisor. Once a baseline was achieved (6 sessions) BITE supervision began. BITE supervision occurred for 6 sessions. During this phase of the study, SAU did not take place. Rather, the supervisor and therapist met for approximately 10 minutes between sessions to plan for the following session. During the BITE portion of the study, sessions continued to be coded for adherence by the off-site coder. After 6 BITE sessions, BITE supervision was removed, and SAU resumed. DBT adherence was measured for 4 additional weeks after BITE supervision ended. After post-BITE sessions were completed, the therapist listened to each session's audio recording (5 baseline, 6 BITE, and 4 post-BITE sessions) and completed the "DBT Self-Assessment Adherence Scale" created for this study to assess DBT adherence. Therapist self-assessment of overall adherence to DBT a well as to each sub-category of DBT strategies was then compared to the expert coder's adherence scores.

BITE Set-Up (see figure 1 for visual diagram)

During BITE supervision, a computer was set up behind the patient and the supervisor was video-conferenced into the session. A web-cam was set up allowing the supervisor to see and hear both the therapist and the patient. The supervisor was on mute and utilized the screen-sharing feature to share a word document from her computer screen to the screen in the therapy room. The supervisor observed the therapy session in real time and provided live feedback to the therapist during the session in the form of typed notes on the computer screen that was visible to the therapist but not to the patient. The therapist then was able to integrate feedback as much or as little as desired. The feedback given in each BITE session was saved for use in the analysis section of the study.

In this study, BITE supervision utilized VSee, a secure web-based system that provides video conferencing and screen-sharing capabilities. VSee is HIPAA compliant, protecting patient confidentiality. All sessions involved in the BITE protocol were audio recorded using a digital audio recorder. Audio recordings were securely sent to the expert adherence coder along with a copy of the patient's diary card and a session note. All data was sent using Hightail.com, a secure online file-sharing application that is encrypted to protect information being sent. All technology used in the BITE set-up was chosen to provide a high level of patient confidentiality, and data being sent contained minimal, if any, identifying pieces of information.

Analysis Plan

Quantitative*:* Descriptive statistics are used to compare the expert coder's adherence scores to the therapist's self-assessment adherence scores. The percentage of agreement between expert coded adherence and self-assessed adherence is highlighted for both global DBT and dialectical strategy adherence. Average adherence scores are calculated for each section of the protocol. Graphs and tables are used to illustrate results of expert coder adherence scores and therapist self-assessment adherence scores.

Qualitative: The therapist's perspective of participating in the BITE protocol is presented in a narrative form and information from BITE session transcripts is used to assist in illustrating the therapist's experience. Copies of the written feedback during BITE are used to highlight interventions in which the supervisor suggests the use of DBT strategies, and relationships between suggested strategies and adherence scores are explored. Transcripts are used to compare supervisor feedback and suggested strategies to adherence scores for the sub-category of dialectical strategies.

Measures

DBT Global Rating Scale (Linehan, unpublished work, 2003): This is a measure used to code therapist adherence to DBT on a 5-point scale (to 1 decimal point), with a score of 4.0 for higher denoting adherence. The measure rates adherence to each category of DBT strategies (ie: dialectical strategies and

contingency management strategies) and also includes an overall score of adherence.

DBT Self-Assessment Adherence Scale: This measure, adapted from the DBT Global Rating Scale "cheat sheet", measures therapist self-reported adherence to DBT. Therapists rate themselves as adherent or not adherent (YES or NO/NA) to DBT overall and to each of 12 sub-categories of DBT strategies (See Appendix A).

BITE Satisfaction Scale: Adapted from the Purdue Live Observation Scale (Sprenkle, et. al, 1982), this scale was modeled after a previous adaptation used in a pilot study at the Behavioral Therapy Clinic at Goethe University Frankfurt (Jacob, Weck, & Bohus, 2013). In the pilot study, the Purdue Live Observation Scale was adapted to assess supervisor, patient, and therapist satisfaction of BITE across 25 BITE sessions with ten patients, six therapists, and five supervisors. Rizvi et al. further adapted the questionnaire to include only questions for therapists and patients. The BITE Satisfaction Scale rates the perceived acceptability and feasibility of BITE supervision on a 4-point Likert scale ranging from 1= strongly disagree to 4= strongly agree. Areas of satisfaction include perceived usefulness, degree of disruption, comfort level, usage intention, applicability, mental effort, and therapeutic relationship. The therapist version contains eight items including statements such as "The use of BITE increases the effectiveness of my work" and "It was difficult to divide attention between monitor and patient". The patient version contains five items including statements such as "Therapy sessions were more effective because of the supervisor's observation" and "The presence of a computer was disruptive".

Results

The therapist and patient completed six baseline sessions, six BITE sessions, and four post-BITE sessions. Each session was coded for adherence to DBT by the expert coder within a week of the session. Student therapist-rated adherence was coded after the completion of the BITE protocol by reviewing the audiotape of each session and assessing adherence according to the DBT Self-Assessment Adherence Scale. Expert-coded adherence scores were not revealed to the therapist until after self-assessed adherence coding was complete.

Student Therapist Adherence: The larger BITE study aimed to compare student therapist adherence to DBT before, during, and after BITE supervision. It was hypothesized that adherence scores would increase during BITE sessions and gains in adherence would be maintained once BITE was removed. In the current study, the student therapist's adherence scores indicate adherence throughout the protocol (See Figure 2). Her average adherence score was 4.07 during baseline sessions, 4.10 during BITE sessions, and 4.10 during post-BITE sessions (see Table 3). A score of 4.0 or higher indicates adherence to DBT.

Self-Assessed versus Expert-Coded Adherence to DBT (Global): It was hypothesized that student therapist self-assessed adherence scores to global DBT would be higher when compared with expert coder adherence scores. In contrast to that hypothesis, there was no significant disagreement in adherence scores when comparing self-assessed adherence scores with expert coder adherence scores (See

Table 1). There was 93.8% agreement in global adherence to DBT, with only one session differing in agreement on adherence to global DBT adherence. That session, a post-BITE session, was coded as adherent to global DBT by the expert coder but not by the student therapist.

Self-Assessed versus Expert-Coded Adherence to DBT (dialectical strategies): There was more disagreement between student therapist self-assessed scores and expert coder adherence scores for the subcategory of dialectical strategies (see Table 2). There was 62.5% agreement in adherence to dialectical strategies. Expert coder adherence scores indicated that the therapist was adherent to dialectical strategies in 68.8% of sessions (11 sessions), whereas the student therapist adherence scores indicated a self-assessed adherence to dialectical strategies in 93.8% of sessions (15 sessions). Student therapist self-assessed adherence scores were higher than expert coder adherence scores in 31.3% of sessions (5 sessions).

Student Therapist Adherence to Dialectical Strategies: It was also hypothesized that the student therapist would have higher adherence scores for dialectical strategies during BITE and post-BITE sessions than baseline sessions. Results from this study indicate that adherence scores for dialectical strategies were higher during BITE sessions than baseline sessions, although this difference was not significant (see Figure 3). The average adherence score for dialectical strategies during baseline sessions was 3.9, while the average adherence scores for dialectical strategies during BITE and post-BITE sessions were both 4.0 (see Table 3). Lastly, it

was hypothesized that gains in adherence to dialectical strategies would be maintained post-BITE. Increases in adherence to dialectical strategies were maintained after BITE was removed, and continued to improve post-BITE. By the end of the protocol, the student therapist was consistently adherent to dialectical strategies in all post-BITE sessions, as compared with BITE sessions where adherence scores ranged from 3.8-4.2.

Use of Dialectical Strategies in BITE Sessions: There were no significant observable differences in the therapist's use of dialectical strategies during BITE sessions compared with non-BITE sessions. There are six dialectical strategies that are coded by the expert coder. For each strategy, the coder determines the extent to which the therapist "moves with speed and flow", "speaks in metaphors", and utilizes other dialectical strategies laid out in the DBT manual. If a strategy is used, the coder determines whether the skill was used adherently and whether it warrants an upgrade or downgrade to reflect the effectiveness of the strategy. Some strategies are to be coded each session; some strategies are not necessary each session. If a strategy is not used and is not necessary, that is reflected in the scoring and does not negatively impact the adherence score.

Throughout the BITE protocol, scores for two dialectical strategies were either upgraded or downgraded according to the student therapist's appropriate use of these strategies. In four sessions, the student therapist was downgraded (score of 3) for the strategy "Therapist works for synthesis and models dialectical thinking and behaviors". Of the four sessions, two were baseline and two were

during BITE. The other strategy that was downgraded was "Therapist advocates balanced solutions and skills". This was downgraded once (score of 3) in a BITE session. The student therapist received an upgraded score for "Therapist advocates balanced solutions and skills" in two sessions (scores of 5). One session was during baseline and one session was during BITE. Other than those variations, all scores for dialectical strategies either reflected the appropriate use of strategies in each session (score of 4) or the absence of unnecessary strategies (score of 0) in each session.

Results from BITE Satisfaction Scale (see Table 4): After the completion of the BITE protocol, therapists completed the BITE Satisfaction Scale, a self-report measure adapted to assess the acceptability and feasibility of BITE as a supervision method. The therapist in this study strongly agreed with the statement, "The use of BITE increases the effectiveness of my work", indicating a perception that the use of BITE increased the therapist's ability to deliver DBT effectively and adherently. The therapist also thought the implementation of BITE was relatively easy, agreeing with the statement, "The use and operation of BITE is simple". The therapist's perception of how BITE impacted the delivery of treatment was favorable: the therapist disagreed with the statements, "The use of BITE requires great mental effort" and, "It was difficult to divide attention between monitor and patient". Additionally, the therapist strongly disagreed with the statement, "BITE negatively affects the therapeutic alliance", indicating a perception that BITE did not harm the therapeutic relationship and in fact may have had a positive impact on the alliance.

The therapist strongly agreed with the statement, "The use of BITE was agreeable" and looking forward to the use of BITE in the future, the therapist strongly agreed that, "I would use BITE frequently if technology were available".

Narrative: Therapist Experience with BITE Supervision*: (note: For this section, the narrative will be presented in the first person from the therapist's perspective.)*
On the BITE Satisfaction Scale, I somewhat agreed with the statement, "The use and operation of BITE is simple". I found that the set-up for BITE was relatively easy and added only an extra five minutes to my session preparation time. Some limitations in the clinic had to be addressed, namely the lack of accessible Wi-Fi and the high demand for clinic laptops. Given these constraints, preparation for BITE included booking a specific clinic room ahead of time to connect to the Internet manually, and ensuring that a specific clinic laptop was reserved for the time that BITE occurred. Even given these constraints, I found BITE set-up to be relatively easy and quick.

We ran into only one technological glitch during BITE sessions. During the second BITE session, the supervisor's computer unexpectedly turned off, ending the BITE connection. I did not notice that the connection had been lost until the supervisor called again to connect five minutes later. At that point, the session was interrupted in order to accept the call and reconnect with the supervisor. In the moments that BITE was disconnected, I was having a "heart-to-heart" with the patient discussing ways to solve the therapy-interfering behavior of poor time management on both our parts in sessions. The fact that I did not notice that the supervisor was no longer connected to the session speaks to one of the benefits of

BITE, namely the therapist's choice in whether or not to attend to the computer screen at any given moment. In those moments, I was not seeking feedback from the supervisor, and therefore was not glancing at the screen to incorporate any supervision. If this had been bug-in-the-ear supervision, the loss of connection would likely have been more disruptive and may have distracted me from the discussion. Instead, I continued uninterrupted in discussing the therapy-interfering behavior.

In the first BITE session, I had quite a bit of anxiety related to the presence of the computer and webcam. I was concerned with making sure BITE was set up properly and was nervous about the patient's reaction to being observed during the session. In fact, the patient had no notable reaction to the additional camera and computer, and gave feedback after the first session that after awhile, she no longer thought about the supervisor's observation. As BITE continued, I found that the presence of the computer in itself was not bothersome, however I did think that the way we had to set up the room—with the therapist and patient sitting very close to each other in order to be captured on the video stream—was unnatural and sometimes bothersome. I reflected this feedback on the BITE Satisfaction Scale by "somewhat disagreeing" with the statement, "The presence of a computer was bothersome". I thought "somewhat disagree" reflected my opinion that the presence of a computer and the observation of my supervisor was not bothersome per se, but the way we had to set up the room to accommodate the presence of the computer and camera was not ideal.

It was relatively easy to attend to both the patient and the supervisor's feedback during BITE sessions. At first, I was distracted by the typed feedback on the computer screen. In the first session, there was a moment when I was speaking to the patient and forgot what I was going to say next because I was simultaneously trying to read the computer screen and consider how to integrate feedback into what I was saying. I quickly adapted my reading strategy by waiting to read the screen until I was taking a break from speaking. After the first session, my supervisor and I discussed how we could adjust our BITE supervision styles to help following sessions flow more smoothly. I gave the supervisor feedback that shorter notes were easier to read, so going forward she to kept her supervising statements brief. I also noticed that during the first BITE session, I felt pressured to read every supervising statement as it occurred and integrate her suggestions into the session as much as possible. As I continued to be more comfortable getting typed feedback, I began filtering the feedback more skillfully, integrating it when it flowed into the session and letting other comments pass by unaddressed as the flow of the session turned in another direction. As one piece of delivering DBT adherently is maintaining "movement, speed, and flow" (Linehan, 1993), I thought this adjustment was especially important. After the BITE phase ended and I was completing the BITE Satisfaction Scale, I somewhat disagreed with the statements, "It was difficult to divide attention between monitor and client" and "BITE requires great mental effort". At first, I noticed difficulty attending to both, but after one session and some adjustments on the supervisor's and my part, it was not a

challenge to attend to the BITE feedback while being present with the patient in session.

Prior to the start of BITE, I was perhaps most anxious about being observed live by my supervisor. I worried that I would receive critical feedback and that my anxiety would interfere with my ability to conduct therapy effectively. I also anticipated that having someone observe my sessions would have an impact on how I interacted with my patient and might negatively impact the therapeutic alliance. As anxiety-provoking as the first BITE session was, I quickly became accustomed to being observed and found the BITE supervision minimally intrusive. In fact, it was a comfort to have my supervisor, an expert in DBT, watching the session. I received suggestions from her when I was unsure of how to proceed in the session. Additionally, she positively reinforced my doing something well in session by making comments such as "You're so good!" or "Good job!". This provided me with reassurance and also helped me identify my strengths in any given session. In general, I found the presence of my supervisor to be a sort of "safety net" during sessions. When BITE was removed, I did not feel a sense of relief in no longer being observed as I had once thought I would feel, but rather I noticed the loss of a coach and cheerleader in sessions. When completing the BITE Satisfaction Scale, I reflected these opinions in strongly agreeing with the statements, "The use of BITE was agreeable" and "The use of BITE increases the effectiveness of my work". I also strongly disagreed with the statement, "BITE negatively affects the therapeutic alliance", as I thought that getting feedback about my therapeutic style in sessions

gave me the opportunity to strengthen rapport in the moment. This is described in more detail in an example below.

I also strongly agreed with the statement, "I would use BITE frequently if technology were available" because I found BITE to be an acceptable, and sometimes superior, alternative to usual supervision. Prior to the start of the protocol, I was concerned about forgoing "supervision-as-usual" sessions. I was worried that I would not have enough time to discuss the case with my supervisor and I anticipated that I would feel underprepared for sessions. On the contrary, I found that the weekly DBT consultation team meetings provided me ample time to discuss the case and provided me support when needed. This is a benefit of implementing BITE supervision in a DBT training clinic; consultation team provides an additional venue to discuss treatment challenges and questions in addition to one-on-one supervision. Also, I thought that my supervisor provided me with more direct and relevant feedback during BITE sessions as compared with usual supervision. Rather than depending on my recall of the session or watching clips of the session afterwards, BITE gave her a more complete picture of the treatment because she was directly observing the entire session for a period of six weeks.

In-Depth Look at the Implementation of BITE Supervision: BITE supervision was conducted in six sessions in this study. On average, the supervisor made 35 comments per session, ranging from 28-43 comments per session. In order to provide a more in-depth look at how BITE supervision was conducted, transcripts of session segments are provided with accompanying BITE feedback to demonstrate

how BITE supervision was utilized in DBT sessions. As noted above, there were no significant differences in adherence scores for overall adherence or dialectical strategy adherence between BITE and non-BITE sessions. However, BITE supervision did effect therapeutic style, the use of DBT strategies, and the use of dialectical strategies in the following examples.

In session 10, the fourth BITE session, the supervisor directly suggested the use of specific DBT strategies. In the session, the patient and therapist were discussing a phone coaching call made during the previous week. The patient described the events leading up to the coaching call. She had texted an old friend about making plans to get together as part of her treatment goal to increase social support by reconnecting with old friends. The patient noticed that after texting him, she felt very anxious when he did not immediately respond to her text. She began to have worry thoughts about why he was not responding. As she described this experience, the supervisor provided this feedback: "SOME V5—IT'S HARD TO MAKE CONNECTIONS WITH PEOPLE. IT WILL LEAD TO ANXIETY". The supervisor's suggestion to validate the patient using a level V5—normalizing the patient's experience—was incorporated into the conversation a short while later:

> *Therapist: So between the time you texted him and called me, you felt very anxious.*
>
> *Patient: Yeah, and the feelings were not subsiding. It wasn't like an instance of a pang of panic, it just felt like it was escalating and I was concerned.*
>
> *T: I mean, that's very reasonable. I think that what you experienced is very common. I imagine its very hard to make connections with people and try to*

reach out to people you've lost touch with so its understandable that you'd feel very anxious in those moments.

Later in the same session, the supervisor again suggested the use of validation to normalize the patient's experience. In discussing the patient's goal of increasing social contact and social support, the patient discloses that she struggles to make friends as an adult.

P: I think after college, switching gears and switching social paradigms, I think that I've had a much harder time, probably mostly due to my environment, but I've internalized it a lot, that I think I have a hard time making friends. Whereas in college… even I was talking to my friend on the phone the other day and he was like, "What are you talking about? You can start up a conversation with anybody!" And it's true. He was like, "You can start conversations with cab drivers and like the cashier at the supermarket," and I really do, I mean, I can…

As she describes what her friend said to her, the therapist hypothesized that this comment was invalidating to the patient, and the supervisor likely had the same thought. As the patient begins to self-invalidate by stating, "It's true, I really do, I can [talk to anyone]…", the supervisor suggests that the therapist normalize how challenging it is for adults to make friends. She types: "IT'S SO HARD TO MAKE FRIENDS AS AN ADULT! V5 THE HECK OUT OF THIS". The therapist then comments:

T: Well, you're likely not going to be trying to befriend cab drivers. I mean, it's so hard! I'm telling you, it's so hard to make friends as an adult. You're not

thrown into a classroom situation where you're friends with your parent's friend's kids or you're friends with whoever sits next to you in school.

After the therapist highlights that it is difficult for many adults to make friends, the patient continues on to talk about why she finds it difficult to meet new people as an adult. It is likely that the supervisor's feedback contributed to the therapist making an effective intervention to decrease the patient's self-invalidation in the moment.

Another type of feedback provided during BITE supervision was in regards to the therapist's style. In DBT, there is an emphasis on the therapist balancing "reciprocal" and "irreverent" strategies. In other words, a therapist who is adherent to the DBT model is shifting between emanating warmth and being more direct and challenging in the way she responds to the patient. During session 12, the last BITE session, the patient was late to the session because there was a truck parked in her usual spot. The therapist felt annoyed at the beginning of session, as she was concerned about attending another meeting on time that started directly after the session. The therapist spoke to the patient in a cold and change-focused manner as the session began.

T: Just first off, I'm going to have to end five after still.

P: Okay, I understand. It's unforeseen circumstances.

T: Yeah, lets talk about it though. Is there any way for you to get here earlier next time?

P: Um…

T: Because this is a problem that is probably… I mean, there won't be a truck here each time but because the school year is starting there won't always be a spot available.

P: Right, I don't understand why they let trucks park there.

T: I don't think there's anyone monitoring it. But either way, the lot might be full.

P: Yeah, I understand. I do make the effort, I try.

T: I'm just thinking ahead because since we switched to Mondays, we are in a time crunch. I have a meeting at 12, so I want to make sure that we get the full hour.

P: Right. Um, yeah, I can definitely be more mindful.

T: Is there anything we can put in place, or anything I can do to help you to plan ahead?

P: No, I just think I need to rearrange my schedule because now I'm getting home after babysitting, so I just need to get home and change my clothes and make breakfast. If I just get all those things done…

T: So maybe getting your clothes out ahead of time or something.

At that time, the supervisor offers this feedback: " TRY BEING A BIT WARMER". The therapist, reading the feedback, becomes more aware that she sounds cold, and attempts to act warmer towards the patient.

P: I mean, its tough because I have a fifteen-minute window when I wake up, so I have to wake up the night before… I'm working on it. I want to talk about my new schedule.

T: Sure! Alright, I just want to make sure that we get the full hour together, that's all.

P: Me too, me too. And it's always a concern for me, I don't want to make you late and I definitely value every minute of this so I don't want to miss out.

T: Yeah, I do too. Exactly, ok good. I'm glad we're on the same page. So let's get right to setting an agenda for today.

In the recording, the shift in tone is quite notable. The therapist's voice becomes more animated and higher pitched, indicating a friendlier approach to the patient. While it is difficult to gauge the therapist's tone of voice in the transcript, it can be noted that the therapist attempts to align with the patient by stating that she, too, values their time together. Rather than continuing to problem-solve how the patient could arrive on time, she instead highlights the shared goal of maximizing their time together, and then models that by quickly moving on to set the agenda.

There were no significant changes in adherence to dialectical strategies during BITE sessions as compared with non-BITE sessions. However, adherence scores for this subset of strategies did vary from session to session during BITE supervision. Some sessions were considered non-adherent, resulting from a lack of dialectical strategies when needed, or the misuse of a particular strategy. In other sessions, the therapist scored above the adherence cut-off for demonstrating the use of dialectics in a particularly effective way. Session transcripts and accompanying BITE feedback are used to highlight moments when BITE supervision may have affected the use of dialectical strategies in session.

In session 11, the fifth BITE session, the therapist's adherence score for the subcategory of dialectical strategies was 4.2, the highest adherence score for dialectical strategies amongst BITE sessions. The therapist was upgraded for the particular strategy "Therapist advocates balanced solutions and skills". During this session, the patient and therapist were discussing the patient's upcoming participation in a religious social event occurring that coming weekend. The patient was anxious about attending the event, and was especially concerned about other people's judgments of her. Therefore, one item on the agenda was to identify skills the patient could use in preparation for the event and to identify skills she could use in the moment at the event to tolerate her anxiety. At one point, the therapist asks the patient what module of skills she thinks would be useful when feeling anxious.

T: So part of what I hear you saying is that you anticipate this is one of those situations where you are just going to feel nervous, right? So what does that signal to you, what types of skills can you use, or what module of skills?

P: Opposite action.

T: Opposite action. So emotion regulation skills to help you reduce anxiety that you're feeling as you go into the situation. So that's one option, and I think that's a good option to keep in your back pocket. Now, I'm thinking about something else though that's more about…

P: Distress tolerance?

T: Yeah. Do you have any idea why I'm thinking that?

P: Um… I'm not really sure.

T: Okay. So there's a difference between emotion regulation and distress tolerance. Distress tolerance has more to do with getting through a tough situation without making things worse while tolerating the intense emotions that you're feeling. Emotion regulation is more about changing the emotion. Distress tolerance is about accepting the emotion, that actually there's a really good reason why you're feeling anxious! And I think that's especially important for you to remember. That anxiety's really uncomfortable and there's a reason that you're feeling it. Any idea why?

P: Because I'm scared? Because it's a situation that's going to be unpleasant.

T: Okay, so part of what's going on in your mind is that this is going to be unpleasant. The thing that this signals to me, though, is that this is very important to you. Right? Would you be anxious if you didn't really care?

P: Yeah, the stakes are really high.

T: Yeah, this is something, being social, that you really value.

T: When you go into a situation and you have high expectations or you're thinking, "This is really important to me", of course you're anxious. You are, I am, most people would be. It's a very natural reaction. So it makes a lot of sense that you're anxious about this because being social is really important to you. So lets talk about you getting there and what you think you're going to do when you're there, and lets also talk about ways you can tolerate the anxiety and maybe even the thought that someone might notice that you're anxious.

P: Okay.

In this section, the therapist is advocating for the patient to use the acceptance-based skills of distress tolerance. Rather than trying to change her anxiety by practicing "opposite action", the therapist validates the patient's anxiety and suggests that the patient consider the emotion's function—communicating how important this event is to the patient—as a way to accept the emotion. During this exchange, the supervisor types, "IS THE ANXIETY GOING TO GET IN THE WAY OF HER GOING THOUGH?" This prompted the therapist to check in with the patient.

T: Do you think the anxiety's going to get in the way of you getting there?

P: I think it's going to make it harder, but I'm pretty much decided that I'm going to go.

T: Okay, so your mind is set that you're going, and the anxiety's going to make it harder. Awesome. So what can you do to tolerate distress while you're getting out the door and making your way there?

P: Well, I think there are certain things, like self-soothe…

The supervisor's feedback prompted the therapist to check in with the patient about whether her anxiety might interfere with her going to the event. If that were the case, change-oriented skills like "opposite action" would be appropriate to reduce her anxiety enough so the patient would attend. In other words, the supervisor's feedback reminded the therapist to assess whether skills used to change emotions might be necessary, as well.

Later in the session, patient and therapist were role-playing a conversation the patient could have when introducing herself to someone at the event. The therapist suggested using the skill of "cope ahead"—mentally rehearsing the steps

necessary to be successful in the interaction—during the role-play. Afterwards, the therapist inquired how the patient thought she did.

P: I feel like I did okay, but I also feel like I was a little awkward.

(BITE FEEDBACK: HOW ANXIOUS?)

T: Okay, so how anxious are you feeling right now, 0-10?

P: Five.

T: Okay, lets add two because when you're talking to someone it won't be me. So that's pretty anxious. And what can you do in this moment to help you tolerate that?

P: Think lovely thoughts.

T: Sounds nice, but I'm not sure that's a skill!

P: I could be mindful, like listening to what the other person is saying, trying to remember their name, trying to remember what they're saying.

At that point, the supervisor provides this feedback: "ALSO, EXPECT AWKWARDNESS AND NOT HAVE ZERO AWKWARDNESS BE GOAL". The supervisor is highlighting to the therapist that the patient might want to eliminate all awkwardness from the interaction, and she is suggesting that rather than eliminating it, awkwardness can be an accepted part of the interaction. The therapist integrates this feedback as the conversation continues:

T: That's a really good idea. So participating in the conversation, listening to what they're saying, really responding to what they're saying… You said you felt awkward. Do you think that having no awkwardness is the goal?

P: Um… I guess not.

T Yeah, no! Conversations with people you don't know are awkward. Especially when you're meeting up in this kind of situation.

P: I think I'd be more concerned if the other person wasn't awkward at all.

T: Sure! Yeah! So it's going to be awkward. Lets take that off the list of goals. It's going to be awkward, or you're going to seem a little awkward.

After receiving the supervisor's feedback, the therapist changes direction. In the first part of the conversation, the therapist is suggesting ways the patient can deal with—either tolerate or reduce—feeling awkward. After considering the supervisor's feedback, the therapist begins to validate the awkwardness of a first conversation, normalizing it in the context of meeting someone for the first time, and suggests that the patient radically accept that the conversation will be awkward and nothing needs to be done to change that.

In this session, the expert adherence coder thought the therapist exceeded expectations in advocating both change and acceptance within the skills and solutions offered to the patient. More specifically, a score of "5" was given because the therapist, at some points in the session, encouraged the patient to take the "middle path" between acceptance and change. In both of these detailed interactions, the supervisor's feedback reminded the therapist of the other side of the primary dialectic in DBT—change versus acceptance. In the first interaction, the supervisor's feedback resulted in the therapist taking a break from discussing acceptance skills to assess whether change strategies were necessary. In the second interaction, the supervisor's feedback prompted the therapist to take a different approach in discussing awkwardness, and she switched gears by validating how

awkward a first conversation can be, rather than brainstorming ways to eliminate awkwardness.

BITE supervision encouraged the therapist to practice using dialectical strategies that she felt less comfortable or skilled in using. In session 9, the third BITE session, the therapist suggests the use of a metaphor to illustrate the patient's hesitancy to fully participate in treatment. Throughout the therapist's training, the use of metaphor has not been her strength. However, with the help of the supervisor's example, the therapist attempts to integrate a metaphor to highlight the patient's current dilemma.

T: What do you think was different that was successful in that situation? I want you to be successful here.

P: When you were like, "Just check it out, just take a look, you don't have to do it".

T: Is that what I said?

P: Yeah. You said, "You just have to check out the website, you don't have to go or anything," and I went that weekend without having any kind of…

(BITE FEEDBACK: METAPHOR OF WANTING TO LEARN TO DIVE BUT NOT GOING TO DIVING BOARD BECAUSE TOO SCARED. YOU ARE HER SWIM INSTRUCTOR)

T: Yeah. So it felt less pressure for you. And I'm noticing that I think the easy way out for me would be to say, "Okay, no pressure. Do what you want to do, you can, you can't, whatever. " But I'm not helping you at all. Honestly, that's a

huge disservice to you. I would not be a good therapist if I said, "Whatever, do it, don't do it".

P: Right.

T: I'm here to pressure you. Well, I'm here to push you. And I'm also here to help you if you start to sink a little bit. Like we're swimming in a pool, I'm the instructor, you're learning how to swim. It's different if you're standing on the sidelines and I'm saying, "Okay, jump in the pool". I want you to be in the pool. I want you to jump in the pool, and if you start to sink, I'll teach you how to tread water or I'll teach you how to swim a little bit. But I want you in the pool.

P: Right.

Given the supervisor's feedback, the therapist was able to integrate a metaphor, albeit slightly different than the provided example, into the conversation with the patient. This metaphor reframes the dilemma of wanting to gain the benefits of treatment without fully jumping into treatment due to fear of difficulties or failure. In this session, the expert coder gave the therapist a score of "4" for the dialectical strategy of "Speaks in metaphors, tells stories, and uses analogies as treatment tools". This demonstrates that the expert coder recognized that the therapist used metaphor in the session, and found that the use of metaphor was appropriate and consistent with the lesson being taught.

One hypothesis of the study was that adherence scores in dialectical strategies would be higher in BITE sessions compared with non-BITE sessions, with the thought being that supervisor feedback throughout sessions would serve as a prompt to remain dialectical. Having another perspective on what is being

discussed in session could lead to the supervisor pointing out the other side of a dialectic or highlighting what the therapist might be missing in a particular moment. The opposite was also true at times; the supervisor's feedback pushed the therapist to hold firmly onto one side of the dialectic, missing the opportunity to find a middle path when in conflict with the patient. In session 9, the third BITE session, the therapist was downgraded to a score of "3" for the item, "Works for synthesis and models dialectical thinking and behaviors". The downgrade indicates that a polarization was present and the therapist did not move towards a synthesis, perhaps not clearly articulating both sides of the dialectic or not using "BOTH/AND" statements enough.

During this session, the therapist and patient were at an impasse about the use of the DBT app provided to all participants as a part of the larger study.

T: What precipitated you calling me, how did you know to call?

P; The lights were off, I had been struggling in bed to fall asleep for like three hours and, you know, in bed at night for hours with thoughts accumulating and increasing and I think that's what made it unbearable, it got to a certain point where I couldn't settle myself down.

T: Did you try other things?

P: Yeah. I tried doing some mindfulness, I tried doing some breathing. Yeah, and that sometimes works. But it didn't really. Nothing I was doing. I was trying to just fall asleep and relax, and I couldn't relax.

T: So by the time you called me you felt really out of options.

P: Yeah.

T: Out of curiosity, at any point did you think to try to use the app?

P: Nope.

T: Alright. So we'll get that more on your radar.

P: I just… I just don't like it. I don't know. I respect that it's a useful tool for a lot of people and I respect that you guys are putting a lot of effort into it. But it's just not for me. I've tried it a couple times and I haven't found it to be effective. I'm not going to go and try to do something that's been ineffective for me in the past when there are other things that I've found more effective.

T: I don't want you to think I'm trying to push it on you instead of using other skills or instead of getting coaching. What I'm trying to suggest is that in the evening on Monday night, it sounds like you could have used more skills in your repertoire. Because by the time you called me felt as if you had run out of options. So going forward I want you and I to make a plan right now. I want a list of skills, I want three or fours things for you to do in the evening because this is a particularly hard time for you...

At this point, the supervisor interjects with the feedback, "SHE CAN DO BOTH". The conversation continues while feedback is being typed:

T:…So in the evening when other people are asleep and there are not too many activities you think you can be doing, I want a list of activities. Or a list of skills. And some of those will be activities. And one of those will be looking at the app. Okay?

The therapist considers the patient's complaints about the app and at first jumps to another solution: creating a list of skills to use in the evening when feeling

emotionally dysregulated. The supervisor's feedback then highlights for the therapist that there is a failure to think dialectically about this situation. It is not one or the other—a list of skills or the use of the app—but rather the patient can try both solutions, which could in fact maximize skillful behavior the next time she is distressed. The therapist quickly adds the last statement to tell the patient that use of the app is not off the table just because she does not like it.

P: (sighs)

T: You seem frustrated.

P: I am.

T: Can you tell me what you're frustrated about?

P: I'm frustrated because I just don't like the app, and it also feels like… you would prefer me to use the app than call and I… I've had problems feeling comfortable calling in the past so it feels like…

T: Yeah I hear that. I was worried that you were going to think that. I've worried about that during our time together because I've noticed that right in the beginning, you said you were going to call all the time and you actually didn't. It's actually been hard to get you to call, and by the time you do call you've sometimes felt out of options. You know, it got to the point where you were having suicide ideation 3/5 before you called me. And so I did have that thought that if I suggested you use the app, you would think I was saying, "Use the app instead of call me". It's another option, and I think it's a very good option because it has all the skills listed right there to remind you of all the skills you can use.

(BITE FEEDBACK: WE WANT HER TO GIVE IT SOME MORE TRIES)

P: I just don't like the way it's organized. It's all a jumble, only if you know what skill you want to use is that effective, otherwise it's all these things that are getting you to play a guessing game. It's not the way I function. I don't like having to fill in numbers all the time. I don't like that, I don't like that. I don't want to fill out a scale of how distressed I am. I'm distressed! I don't want to do that.

T: Okay, hang on, hang on.

P: I just don't like it.

(BITE FEEDBACK: THAT'S LIFE! DOING THINGS SHE DISLIKES)

T: I hear you. I'm having a number of thoughts right now. I hear your complaints about the app. Another thing is that I think we are getting a little away from the goal of this, because the goal for me is not to make you use the app in the absence of everything else. It is to help you learn skills and practice them in moments when you can use them to help you better tolerate the distress that you're in in the evenings.

P: I recognize that, but I've expressed this opinion several times.

T: I hear you, and I understand your opinion and I do value it. AND I'm asking you to still try it.

P: I understand, I'm telling you I've already tried it. I'm not saying I'll never try it, but it's not…

T: You don't like it!

P: Yeah, so why would I do something I don't like when I'm distressed.

T: Because maybe it will help.

This example illustrates a moment in DBT therapy that occurs often: the therapist and patient disagree on something and they are "stuck". This is where the concept of dialectics, and the use of dialectical strategies, is useful. The easiest thing for the therapist to do here would have been to abandon the suggestion of using the app, and develop a list of skills with the patient that she was willing to use. However, that approach is one-sided and it only takes into consideration the patient's preferences, leaving out the other, equally valid side that what she prefers is not necessarily the same thing as what is helpful or skillful for the patient. Throughout this segment, the supervisor holds onto the side of making the patient use the app, providing such feedback as, "We want her to give it some more tries". At first, the supervisor's feedback reminds the therapist of the dialectic that the patient might not like the app AND she can still use it. This was conveyed in her comment, "She can do both". As the conversation continues, however, the supervisor repeatedly provides feedback to the therapist that she should push the app, despite the patient's protests. This is an example of how the supervisor's feedback can actually decrease the use of dialectical strategies; rather than looking for a synthesis in this conflict, the therapist, integrating the supervisor's feedback, continues to push the patient to use the app at the cost of finding more middle-path solutions. The therapist attempts to communicate both sides of the dialectic in making statements such as, "I hear you, and I understand your opinion and I do value it. AND I'm asking you to still try it." Despite the dialectical nature of that statement (using "and" rather than "but"), the therapist is actually insisting that her solution of using the

app is the best solution, which shuts down finding a synthesis in this conflict. As the conversation continues, the patient remains adamant that she would not use the app, and the therapist eventually moves on to another agenda item.

What sets BITE supervision apart from other live supervision strategies is the therapist's choice to either integrate feedback into sessions or ignore it when deemed unnecessary or out of place. Towards the end of the second BITE session, the therapist and patient were planning the most effective way for the patient to re-establish communication with an old friend. The supervisor suggests that the patient text her friend right then in the session.

(BITE FEEDBACK: WHAT ABOUT RIGT NOW? TEXT HER)

T: What if you texted her right now? To open up that conversation.

(BITE FEEDBACK: THEN TIME TO CLOSE UP)

P: Okay.

T: Okay! Alright!

P: I don't know what to say.

T: Okay. So you haven't talked to her in awhile. How long?

P: Maybe a year? We were supposed to get together in the city one time when I was home for a weekend but it didn't work out. So that's in the forefront of my mind, like why did she cancel?

(BITE FEEDBACK: "JUST THINKING ABOUT YOU. HOW'S IT GOING?")

T: Alright, so let's put that aside because we are trying to make a connection here. So why not try saying something like "Hey, I just thought of you. How are

you, what's going on, what's up?" Something to that effect. "Hey, just thinking of you."

P: I don't know if that's weird.

T: I don't know if that's weird either! That's a judgment. Lets just let that slide. Right? You have a goal here.

(BITE FEEDBACK: THE THING IS: IF SHE WANTS TO SCORE THE BALL, SHE HAS TO TRY 10O TIMES)

P: How about, "Hey, what's new? Are you still in the city?"

T: That's great! Did you do it?

P: Yeah, I did it.

T: Let me see. That's great! Okay, so it's time to wrap up.

The therapist incorporates the supervisor's first two comments, but chooses to ignore the metaphor of practicing to score the ball. There are a number of things that contributed to the decision to not integrate a metaphor into the session. First, the therapist is attempting to end the session, and did not want to draw out the session longer by investing in a metaphor. Secondly, the therapist might not have thought the metaphor would be useful in the moment, and instead decided to stay on course with having the patient write the text, then end the session.

Discussion

The aim of the current paper was to provide an in-depth look at the implementation of BITE supervision in a DBT training clinic. Therapist adherence to DBT was assessed by an expert DBT adherence coder to examine any changes in DBT adherence when BITE supervision was introduced and removed. Additionally, the therapist completed a self-assessment adherence measure in order to compare self-assessed adherence to expert-coded adherence. In looking at the effects of BITE supervision on student therapist adherence to DBT, there were no significant differences in therapist adherence before, during, and after BITE supervision. The expert coder's adherence scores demonstrated that the therapist began the protocol adherent to DBT and she remained adherent throughout the protocol. The therapist's self-assessed adherence to DBT throughout the protocol did not significantly differ from the expert coder's adherence scores. Changes in therapist adherence to the subcategory of dialectical strategies were also explored, and there were no significant differences in adherence scores in this subcategory throughout the protocol. Although not significant, the therapist's adherence scores for dialectical strategies were generally lower than global DBT adherence scores and the therapist's adherence to dialectical strategies increased during BITE sessions and reached adherence by the time BITE supervision was removed.

Importantly, this study is the first to demonstrate therapist acceptability and feasibility of BITE supervision in a DBT training clinic. Previous studies have found BITE supervision to be acceptable in other treatment settings (Klitzke & Lombardo, 1991; Scherl & Haley, 2000), and this study extends those results to a highly

structured treatment intended for high-risk and complex patient populations. The therapist in this study thought that BITE increased the effectiveness of her work and found BITE to be minimally distracting and easy to implement. This dissertation, along with the larger BITE study, can be added to the growing body of research that looks at how BITE supervision could be used in training settings.

Because the therapist was adherent to DBT throughout the protocol, it was not possible to see whether BITE supervision contributed to treatment adherence during or after BITE sessions. These findings suggest that BITE supervision might not have significant effects on therapist adherence when student therapists are highly trained or already adherent to DBT. This extends results from Weck et al. (2015) RCT that concluded therapists in their BITE supervision group had higher levels of competence than the control group, however these differences disappeared when pre-treatment differences in therapist competence were taken into consideration. In other words, therapist competence prior to the start of BITE may mediate any effects of BITE on therapist adherence or competence. If that is the case, these results could inform the way that BITE supervision is used in training clinics as a tool to increase therapist adherence. Rather than using BITE supervision with an advanced training student, it might be the case that BITE supervision used with novice therapists just learning DBT could expedite the learning process.

The student therapist had a consistently accurate perception of whether or not she was adherent to DBT in each session. This contradicts the original hypothesis that the student therapist would assess herself as being more adherent to DBT than she actually was. In fact, the student therapist only disagreed with the

expert coder about her adherence to one session, perceiving herself as non-adherent in the final follow-up session. One possible explanation for these results is that the student therapist's consistent adherence was an indication that the therapist was knowledgeable about the treatment to the extent that she could accurately determine her own adherence in each session. This hypothesis is supported by previous research on self-assessed therapist competence by Reynolds and Moore (2008), which found that therapists who were considered competent by an expert coder over-rated their own competence to a lesser degree than less competent therapists. It is possible that more competent or adherent therapists have a greater ability to evaluate their own use of treatment-specific strategies than therapists who are less adherent or competent in delivering that treatment. These results highlight the importance of therapist adherence, as higher levels of adherence might lead to more accurate self-assessment of therapist's own strengths and weaknesses.

The therapist's adherence to the subcategory of dialectical strategies did not significantly differ when BITE supervision was introduced or removed. Due to the limited number of sessions in the BITE protocol, the sample size may have been too small, and therefore underpowered, to see significant changes in dialectical strategy use. However, variations in adherence scores for the subcategory of dialectical strategies showed an upward trend in which the therapist was consistently adherent to DBT dialectical strategies by post-BITE sessions. A larger number of sessions in future research might better highlight any significant changes in dialectical strategy use during BITE supervision.

Limitations

Given that this study only included one therapist-patient pair as subjects, conclusions drawn from the therapist's experience in this study should not be over-generalized to other therapists or treatment settings utilizing BITE supervision. Further, because the entire protocol lasted 16 sessions and BITE supervision took place for 6 sessions, any results drawn from the small number of sessions should be considered cautiously. At the same time, although there were no significant differences in variables in this study, it should not be concluded that BITE supervision could not have significant effects on therapist adherence with a larger sample of sessions or therapists.

Although the expert adherence coder was trained to reliability on the DBT Global Rating Scale (Linehan, 2003), the coder's scores were determined subjectively by one coder listening to the series of sessions in this protocol. The process of coding tapes has inherent room for human error, and this needs to be kept in mind when considering all adherence scores. In addition, the DBT Self-Assessment Adherence Scale was not identical to the more complex DBT Global Rating Scale. Comparisons drawn between results from both scales should be considered with the understanding that the self-assessed scores were determined using a measure developed for this study, while the expert scores were determined using a measure that has previously been tested for reliability and validity. The DBT Self-Assessment Adherence Scale was adapted for the use of this study and has not been used in other research, and therefore the items on the scale lack validation in previous research.

Future Research

Exploring the potential uses of BITE supervision in DBT training clinics creates promising directions for future research. This study explored the effects of BITE supervision on therapist adherence with a therapist who had already been intensively trained in DBT throughout three years of graduate school. In future studies, BITE supervision could be implemented with more novice therapists learning DBT for the first time to assess how BITE helps novice therapists acquire knowledge of the DBT treatment model. If BITE supervision does in fact enhance or accelerate DBT adherence for student therapists, it would be interesting to consider the best time within treatment to use BITE and to determine the length of BITE that would be most effective in training DBT student therapists to adherence.

Building off of previous research on therapist self-assessment (Reynolds & Moore, 2008), it would also be interesting to compare self-assessed adherence between novice and more experienced therapists, and explore how BITE supervision affects self-assessment among therapists with less DBT experience. As noted in the therapist's narrative account of BITE sessions, one strength of BITE supervision was the immediate reinforcement of positive therapist behaviors in sessions by receiving feedback such as "Good job!" and "Well done!". The therapist thought this feedback helped her identify her own therapeutic strengths. Since previous research suggests that more competent therapists have greater abilities to accurately self-assess their skills as a therapist, it would be important to explore how BITE supervision might increase therapist's self-assessment skills to identify their own strengths and weaknesses.

The next step in looking at the effects of BITE supervision in a DBT training clinic could be to look at the relationship between BITE supervision and patient outcomes. Since DBT deals with severe and high-risk patients, it is especially important to consider the effects of BITE supervision on treatment outcome variables such as suicidal behaviors, emotion dysregulation, and skills acquisition. It could also be interesting to do qualitative research using BITE transcripts on the relationship between therapist-integrated BITE feedback and patient's use of DBT skills.

Much of the research on BITE supervision thus far has focused on the feasibility and acceptability of implementing this technology-based supervision in various treatment settings. While this study focused on the therapist's experience using BITE, other research might focus more on how acceptable and feasible BITE was to implement from the perspective of the patient and supervisor. It could be interesting to look at supervisor and clinic director attitudes about BITE supervision before and after a BITE protocol to possibly challenge beliefs that live supervision is difficult, distracting, or has a negative impact on therapeutic alliance.

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Table 1

Expert-assessed global adherence and self-assessed global adherence to DBT

Session Number	Expert-Assessed Adherence (Yes/No)	Self-Assessed Adherence (Yes/No)
1	No	No
2	Yes	Yes
3	Yes	Yes
4	Yes	Yes
5	Yes	Yes
6	Yes	Yes
7	Yes	Yes
8	Yes	Yes
9	Yes	Yes
10	Yes	Yes
11	Yes	Yes
12	Yes	Yes
13	Yes	Yes
14	Yes	Yes
15	Yes	No
16	Yes	Yes
Percent Agreement		93.8%

Table 2

Expert-assessed adherence and self-assessed adherence to DBT dialectical strategies

Session Number	Expert-Assessed Adherence (Yes/No)	Self-Assessed Adherence (Yes/No)
1	No	Yes
2	No	Yes
3	Yes	Yes
4	No	Yes
5	Yes	Yes
6	Yes	Yes
7	Yes	No
8	Yes	Yes
9	No	Yes
10	No	Yes
11	Yes	Yes
12	Yes	Yes
13	Yes	Yes
14	Yes	Yes
15	Yes	Yes
16	Yes	Yes
Percent Adherent	68.8%	93.8%
Percent Agreement		62.5%

Table 3

Average Adherence Scores

	Global Adherence	Dialectical Strategies Adherence
Baseline	4.07	3.90
BITE	4.10	3.97
Post-BITE	4.10	4.00

Table 4

Results from BITE Satisfaction Scale

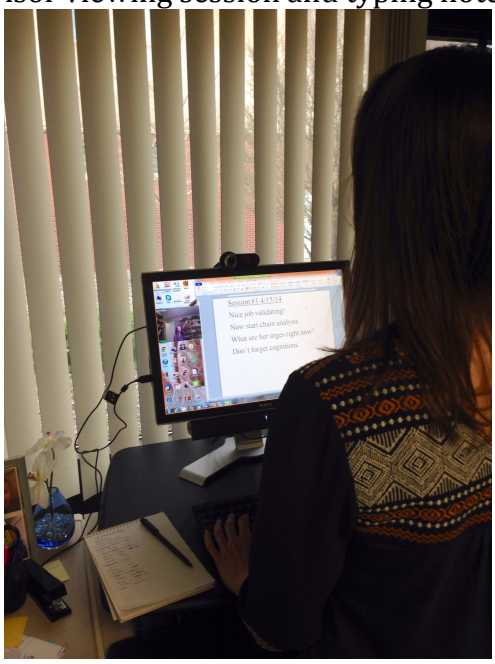
The use of BITE increased the effectiveness of my work	4
The presence of a computer was bothersome	2
The use of BITE was agreeable	4
I would use BITE frequently if technology were available	4
The use and operation of BITE is simple	3
The use of BITE requires great mental effort	2
It was difficult to divide attention between monitor and patient	2
BITE negatively affects the therapeutic alliance	1

4= strongly agree; 3= somewhat agree; 2= somewhat disagree; 1=strongly disagree

Figure 1

Illustration of BITE Set-Up

Supervisor viewing session and typing notes to be displayed to therapist



Therapist in session, seeing notes on computer next to "patient."

Figure 2

Expert-coded DBT adherence score (global)

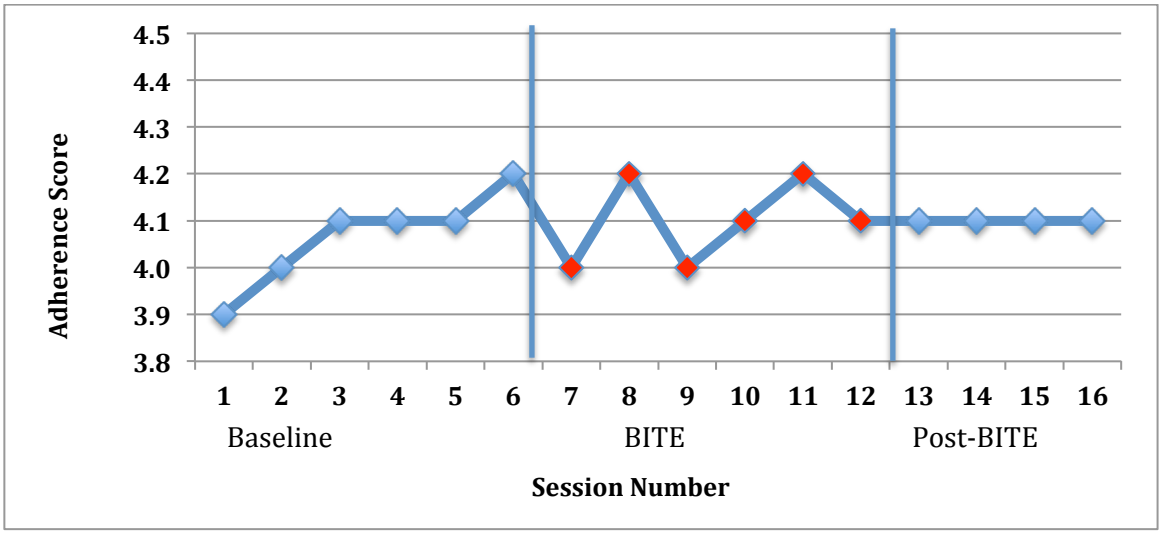
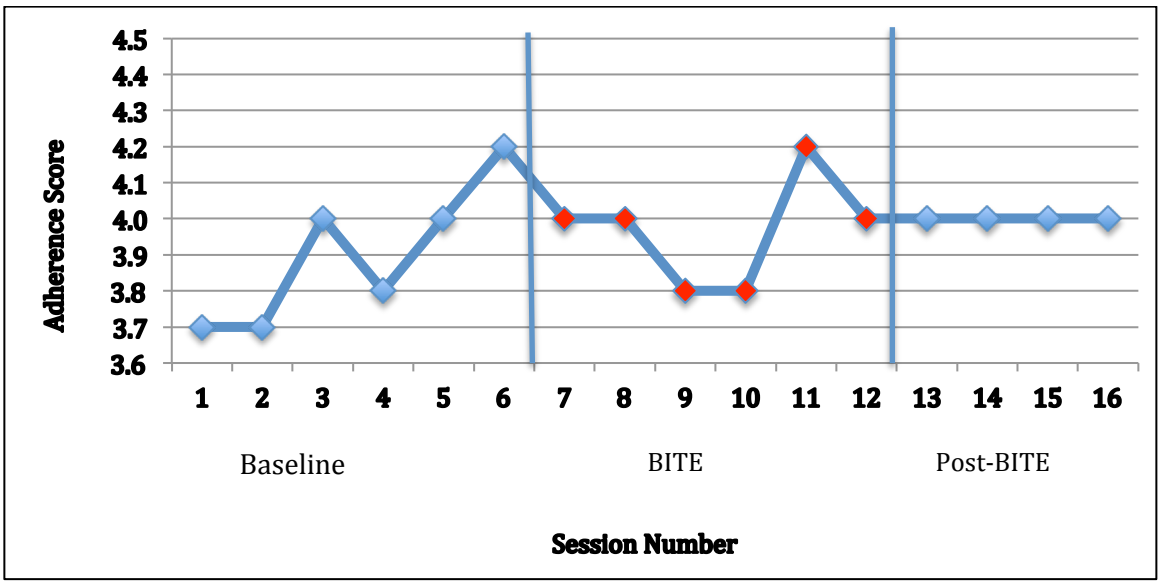


Figure 3

Expert-coded DBT adherence score (dialectical strategies)



Appendix A: DBT Self-Assessment Adherence Scale- (Therapist)

Structural Strategies: • Reviews and conveys importance of diary card since last contact • Attends to initial or deteriorating mood that seriously interferes with therapy • Checks on and conveys importance of other modes of DBT therapy • Organizes session according to primary behavior targets or skills to be taught • Has an emotion focus • Uses session-ending strategies • Discusses termination (when 2/3 treatment is complete) **ADHERENT? YES NO**	**Validation Strategies:** • V1: appears interested • V2: accurately reflects behavior of C • V3: correctly articulates thoughts/feelings not being fully expressed • V4: explains C's behavior in terms of past learning or biological factors • V5: finds and articulates the validity in C's responses in terms of current events • V6: interaction with C is radically genuine • V7: communicates believing in C **ADHERENT? YES NO**
Problem Assessment Strategies: • Helps C define the problem behavior (figuring out rather than assuming the problem) • Helps C specifically describe emotions, cognitions, and behaviors • Relates in session to out-of-session behavior • Highlights patterns of behavior over time • Generates and tests hypotheses with C about variables influencing or controlling behavior • Conducts chain analysis on primary targets • Helps C identify goals and objectives • Asks relevant questions **ADHERENT? YES NO**	**Reciprocal Communication Strategies:** • Is responsive to C • Is awake to in-session behavior of C • Expresses warm engagement • Is nonjudgmental toward C • Self-discloses • Maintains reasonable power equilibrium • Gives and accepts touch **ADHERENT? YES NO**
Exposure Based Procedures: • Uses explicit by non-protocol-based informal exposure procedures • Uses explicit and formal exposure based treatment protocols **ADHERENT? YES NO N/A**	**Case Management Strategies:** • Follows the consultation to the patient agreement guidelines • Intervenes in C's environment (short-term outcome is more important than long-term) **ADHERENT? YES NO N/A**
Dialectical Strategies: • Balanced style and strategies: acceptance-oriented strategies with change-oriented strategies	**Problem Solving:** • Provides didactic information, teaches about behavior • Orients C to treatment and to C's role in the

• Advocates balanced solutions • Magnifies tension by using devil's advocate, paradox, "lemonade out of lemons", and/or extending • Works for synthesis and models dialectical thinking and behaviors • Speaks in metaphors, tells parables or stories, and uses analogies as teaching tools • Moves with sleep and flow keeping C slightly off balance **ADHERENT? YES NO**	process • Helps C generate and evaluate solutions (models/ offers new behaviors to replace dysfunctional behaviors) • Teaches or models new behavior or skills using skills acquisition procedures • Coaches using corrective feedback to shape and refine behavior emitted • Generalizes skills by actively transferring skills learned in session to C's real-world environment • Elicits new behavior out of C in the session • Asks for and attempts to get a strong commitment • Troubleshoots with C to anticipate future problems in applying solutions generated in commitment **ADHERENT? YES NO**
Irreverent Strategies: • Discuss dysfunctional behaviors in a matter-of-fact manner • Directly confronts dysfunctional behavior • Unorthodox/irreverence: uses unexpected, irreverent, or humorous responses **ADHERENT? YES NO**	**Contingency Management:** • Reinforces target-relevant adaptive behaviors • Extinguishes maladaptive behaviors • Uses aversive consequences for dysfunctional behaviors • Uses principle of shaping in reinforcing C's behavior • Observes limits **ADHERENT? YES NO**
Cognitive Strategies: • Clarifies contingencies of C's behavior • Helps C observe and describe cognitions, beliefs, underlying assumptions, and styles of thinking • Challenges cognitions and helps C re-evaluate thoughts/assumptions/style of thinking • Helps C change cognitions with formal modification **ADHERENT? YES NO**	**Protocols:** • Engages in crisis strategies protocol • Uses suicidal behaviors protocol • Uses therapy-interfering behavior protocol • Follows quality of life interfering behavior protocol • Follows phone call protocol **ADHERENT? YES NO N/A**

OVERALL ADHERENT? YES NO