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Practice Settings and Dialectical Behavior Therapy Implementation: A mixed method analysis

Abstract

Background and Significance: Implementation science is the study of transferring innovation into practice. Guided by The Consolidated Framework for Implementation Research (CFIR), this study analyzes Dialectical Behavior Therapy (DBT) utilization in the real world. Such an inquiry informs DBT-uptake in settings, whereby increasing employment of the current gold standard treatment for suicide, non-suicidal self-injury, and behavioral dysregulation. **Methods:** Seventy-nine intensively trained DBT clinicians completed an online survey that quantified implementation outcomes and practice-setting variables. Practice setting variables were compared to DBT implementation using bivariate analyses. Twenty sequential semi-structured interviews bolstered quantitative findings while exploring the field of inquiry that could not be quantified. **Findings and Limitations:** Supervision, team cohesion, team communication, and team climate were significantly correlated with DBT implementation and bolstered by qualitative themes. Four other practice-setting variables were related with moderate significance and little qualitative support, and additional hypotheses were generated. Limitations require consideration of the current research as exploratory. **Conclusions:** The four variables with the clearest connection to DBT implementation can be characterized as interpersonal variables within practice settings. These findings contribute to the identification of key drivers of successful DBT implementation within settings. Future researchers are advised to develop and test implementation strategies incorporating these findings. Practitioners should be mindful of these variables when implementing DBT.

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Practice Settings and Dialectical Behavior Therapy Implementation: A mixed method analysis

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Dedication

This dissertation is dedicated to the loving memory of Joseph McBride, my mentor and friend. The results of this study have encouraged me to reflect on the tangible influence colleagues have had on my work, and my strengths and abilities as a social worker have been tangibly impacted by my relationship with Joe.

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Problem Statement

Evidence-based treatments (EBTs) are largely under-utilized in real-world practice settings (Damschroder & Hagedorn, 2011), and many individuals in need of EBTs do not receive them (Beidas, Koerner, Weingardt, & Kendall, 2011). Fixsen, Naoom, Blase, Friedman, and Wallace (2005) state, “We know much about interventions that are effective but make little use of them to achieve important behavioral health outcomes” (p. 2). Because social workers represent a substantial portion of mental health providers (Conner & Grote, 2008), the transfer of mental health EBTs from research to practice should be of utmost importance to the profession.

Dialectical Behavior Therapy (DBT) is an example of an EBT with demonstrated outcomes for high-risk populations such as borderline personality disorder (BPD), opiate dependence, and bulimia nervosa (Lynch, Trost, Salsman & Linehan, 2007). DBT is also recommended for suicidality, non-suicidal self-injury, and severe behavioral dyscontrol (Landes & Linehan, 2012). With an estimated 18 million United States citizens receiving a BPD diagnosis in their lifetime (Grant et al., 2008), access to DBT is significant for many. Social workers should be regularly offering the treatment, yet its adoption in settings has been slow (McHugh & Barlow, 2010). Given DBT’s robust empirical support for the treatment of high-risk, prevalent populations (*see Tables 1 and 2 below*), the case of DBT is particularly noteworthy in the larger context of underutilized EBTs.

To understand the transfer of EBTs such as DBT into practice, some have advocated for the advancement of implementation science (Bammer, 2005).

Damschroder and Hagedorn (2011) argue that researchers should- but often do not- pay the same level of attention to implementation as they do to the design of interventions themselves (p. 195). Others agree, and the field of implementation science has gained momentum with the worldwide push for evidence-based practice (Aarons & Sawistky, 2006).

Within the study of implementation, particular attention is paid to the identification of barriers and facilitators to innovation utilization (Kauth, Cully, Sullivan, & Blevins, 2011). DBT proponents similarly attend to implementation barriers in training formats such as the DBT intensive training model (Landes & Linehan, 2012), where clinicians learn DBT provision by attending two weeklong training sessions separated by six months of self-study. Through expert opinion (Swenson, Torrey, & Koerner, 2002), qualitative research (Herschell, Kogan, Celedonia, Gavin, & Stein, 2009), and clinician feedback during intensive training (Landes & Linehan, 2012), some barriers to DBT implementation have been identified, including staff turnover, agency policy, and unsupportive management.

Nonetheless, organizational factors remain under-discussed in the literature (McHugh & Barlow, 2010), and uncertainties remain regarding the ability of practice settings to comprehensively support DBT (Federici & McMain, 2009). Swales, Taylor, and Hibbs (2012) found that 25% of intensively trained DBT programs were inactive, and just 57% of active DBT programs were fully implemented. While organizational support was the most commonly reported challenge (Swales, Taylor, & Hibbs, 2012), specific organizational barriers remain unknown or untested through scientific inquiry. Given the high stakes for individuals in need and strong

evidence base for DBT, understanding the impact practice settings have on DBT implementation is imperative.

As important as the area of inquiry is, several challenges exist. First, implementation science is an emerging field (McHugh & Barlow, 2010) with a widespread lack of agreement on terminology (Beidas et al., 2011). Second, the transfer of innovation to practice is complicated. According to Fixsen et al. (2005), “There is broad agreement that implementation is a decidedly complex endeavor, more complex than the policies, programs, procedures, techniques, or technologies that are the subject of implementation efforts” (p. 2).

To navigate through these challenges, implementation scientists recommend the Consolidated Framework for Implementation Research (CFIR) for guidance (Beidas et al., 2011). Developed by Damschroder, Aron, Keith, Kirsh, Alexander, and Lowery (2009), the CFIR is a pragmatic structure that seeks to resolve conceptual and terminological differences in the field, and it is increasingly consulted for its ability to comprehensively consolidate existing implementation knowledge (Lewis, Borntreger, Martinez, Fizur, & Comtois, 2011). Through expansive literature searches across disciplines, the creators of the CFIR have located and defined domains and constructs associated with implementation (Damschroder et al., 2009), offering five major domains of literature-grounded factors that impact implementation. The domains include intervention characteristics, outer setting, inner setting, characteristics of individuals, and process (see Appendix A).

Within the CFIR, the present inquiry narrows its focus to one domain, the inner setting, in order to explore practice setting barriers and facilitators to DBT

implementation. “Inner setting” refers to the environment within a clinic, organization, or practice setting in which an intervention will reside (Lash, Timko, Curran, & McKay, 2011), including variables such as funding source, size, leadership, and morale of a given practice. Using the CFIR as a systematic checklist of constructs ensures exploration of all major literature-supported aspects of inner settings that are believed to impact implementation.

To specifically determine barriers and facilitators to DBT implementation emerging from practice settings, each inner setting CFIR construct must first be considered in quantitative and/or qualitative terms. When quantified, comparisons can be made between aspects of practice settings and the degree of DBT implementation. Therefore, the question for quantitative research is: “What aspects of practice settings are positively associated (i.e. facilitators) or negatively associated (i.e. barriers) with successful DBT implementation?” As an adjunct to the quantitative research, a broader question for qualitative research is: “What inner setting constructs are thought to impact DBT implementation and how?”

Such an inquiry is significant for several reasons. First, testing CFIR constructs furthers the field of implementation science through identification of key barriers and facilitators for future research. Second, such an exploration may assist proponents of DBT in strategizing their implementation efforts by fostering facilitators in their practice settings. Above all, any knowledge informing the real world utilization of EBTs has the overarching goal of increasing access to services for those in need.

Literature Review

While the present inquiry narrowly applies principles of implementation science to DBT, the implications of understanding implementation stretch far beyond any one single treatment. Many, if not all disciplines have a desire to transport their known-to-be-effective technologies into real-world practice, including agriculture, business, child welfare, engineering, health, juvenile justice, manufacturing, medicine, mental health, nursing, policymaking, social services, and others (Fixsen et al., 2005). Implementation science has tremendous value to existing disciplines, including social work. Some have compared it to statistics for its ability to inform and coexist with many diverse fields (Bammer, 2005).

Beyond the academic study of social work, EBTs, and DBT, increased understanding of the transportation of knowledge into practice is universally imperative. In citing the 2002 World Health Report, Bammer (2005) states:

There are ten risks... that account for one third of premature deaths worldwide, including tobacco smoking, unsafe sex, high cholesterol levels, being underweight, and iron deficiency. These are risks for which proven, cost-effective interventions are available. But human society seems unable to implement integrated solutions in a widespread, large-scale, and coherent manner (p. 3).

Reflecting a similar sentiment, Chorpita and Regan (2009) claim:

Although there are hundreds upon hundreds of well-designed randomized control trials, only a tiny fraction of these inform what happens in routine clinical care. This is a poor return on our public investment in science and research, and although continued investment in treatment outcome research is important, it is also time to consider how to maximize the return on those investments already made (p. 3).

So much helpful knowledge exists in the world, yet so little of it is used.

DBT follows this same global pattern. We know much about the treatment, yet it remains underutilized. Further exploration of this disconnect requires increased understanding of DBT and Implementation Science.

Dialectical Behavior Therapy

Much is known about the individuals helped by DBT, its effectiveness, and methods for carrying it out. The prevalence of BPD, the diagnosis most commonly treated by DBT, is known to account for 15% of outpatients (Gunderson & Links, 2008) and up to 50% of inpatients (Rizvi, Dimeff, Skutch, Carroll, & Linehan, 2011). Sixty-nine to eighty percent of individuals with BPD engage in non-suicidal self-injury, and 9% complete the act of suicide (Linehan et al., 2006), so that individuals with BPD have a suicide rate that is 50 times higher than that of the general public (Substance Abuse and Mental Health Services Administration; SAMHSA, 2010). The diagnosis also has a demonstrated high incidence of treatment failure. Individuals with BPD have an average of 6.1 previous therapists, while 72% have had at least one psychiatric hospitalization (Linehan et al., 2006). Given such sobering realities, providing care to individuals with BPD is highly congruent with social work's mission to "enhance the effective functioning and well-being of individuals, families, and communities" (National Association of Social Workers; NASW, 2004).

DBT's efficacy and effectiveness in treating BPD and other difficult to treat populations are well established (Binks, Fenton, McCarthy, Lee, Adams, & Duggan, 2006; Hayes, Masuda, Bassett, Luoma, & Guerrero, 2004; Kleim, Kroger, & Kosfelder,

2010; Lynch et al., 2007; Robins & Chapman, 2004). Through randomized controlled trials (RCTs) DBT has demonstrated reductions in non-suicidal self-injury (Koons, Robins, Tweed, Lynch, Gonzalez, Morse, Bishop... Bastian, 2001; Linehan, Schmidt, Dimeff, Craft, Kanter, & Comtois, 1991; Linehan et al., 2006; van den Bosch, Verheul, Schippers, & van den Brink, 2002), reductions in substance abuse (Linehan, Dimeff, Reynolds, Comtois, Welch, Heagerty, & Kivlahan, 2002; Linehan et al., 1999), decreases in bingeing and purging (Safer, Telch, & Agras, 2001), increases in treatment retention (Linehan et al., 2006; van den Bosch et al., 2002), decreases in depression (Lynch, Morse, Mendelson, & Robins, 2003; Turner, 2000), decreases in anger (Koons et al., 2001; Linehan et al., 1991), and others. DBT has also displayed decreases in emergency care use (Linehan, Armstrong, Suarez, Allmon, & Heard, 1991; Linehan et al., 2006), resulting in an estimated net cost savings of US \$9,000- \$26,000 per individual during one year of DBT treatment (Miga, Karlson, & Dubose, 2013). The author located fourteen RCTs empirically supporting DBT. Most can be downloaded directly from The University of Washington's Website:

<http://depts.washington.edu/btrc/sharing/publications/research-and-articles-on-dialectical-behavior-therapy>, and they can be viewed in Table 1.

Table 1: Randomized Controlled Trials Supporting DBT

Authors	Dates	Title	Size
(1) Linehan, Armstrong, Suarez, Allmon, Heard	1991, 1993, 1994	Cognitive Behavioral Treatment of Chronically Parasuicidal Borderline Patients (plus two follow-up studies)	DBT=24 TAU=22
(2) Linehan, Schmidt, Dimeff, Craft, Kanter, Comtois	1999	Dialectical Behavioral Therapy for Patients with Borderline Personality Disorder and Drug Dependence	DBT=12 TAU=16
(3) Turner	2000	Naturalistic Evaluation of Dialectical Behavior	DBTI=12

		Therapy-Oriented Treatment for Borderline Personality Disorder	CCT=12
(4) Koons, Robins, Tweed, Lynch, Gonzalez, Morse, Bishop, Butterfield, Bastian	2001	Efficacy of Dialectical Behavior Therapy in Women Veterans with Borderline Personality Disorder	DBT=14 TAU=14
*(5) Telch, Agras, Linehan	*2001	*Dialectical Behavior Therapy for Binge Eating Disorder	*DBT=22 WL=22
*(6) Safer, Telch, Agras	*2001	*Dialectical Behavior Therapy for Bulimia Nervosa	*DBTI=14 WL=15
(7) Linehan, Dimeff, Reynolds, Comtois, Welch, Heagerty, Kivlahan	2002	Dialectical Behavior Therapy Vs. Comprehensive Validation Therapy Plus 12-Step for Treatment of Opioid Dependent Women Meeting Criteria for Borderline Personality Disorder	DBT=11 CVT + 12=12
(8) van den Bosch, Verheul, Schippers, Brink	2002, 2003, 2005	Dialectical Behavior Therapy of Borderline Patients With and Without Substance Use Problems: Implementation and Long-Term Effects (plus two follow-up studies)	DBT=27 TAU=31
*(9) Lynch, Morse, Mendelson, Robins	*2003	*Dialectical Behavior Therapy for Depressed Older Adults: A Randomized Pilot Study	*DBT + med=17 med=17
*(10) Lynch, Morse, Mendelson, Robins	*2006	*Treatment of Older Adults with Co-Morbid Depression and Personality Disorder: A Dialectical Behavior Therapy Approach	*DBT + med=21 med=14
(11) Linehan, Comtois, Murray, Brown, Gallop, Heard, Korslund, Tutek, Reynolds, Lindenboim	2006, 2008	Two-year Randomized Controlled Trial and Follow-up of Dialectical Behavior Therapy vs. Therapy by Experts for Suicidal Behaviors and Borderline Personality Disorder (plus one follow-up study)	DBT=52 CTBE=49
(12) Clarkin, Levy, Lenzenweger, Kernberg	2007	Evaluating Three Treatments for Borderline Personality Disorder: A Multiwave Study	DBT=30 ST=30 TFP=30
(13) Linehan, McDavid, Brown, Sayrs, Gallop	2008	Olanzapine Plus Dialectical Behavior Therapy for Women with High Irritability who Meet Criteria for Borderline Personality Disorder: A Double-Blind, Placebo-controlled Pilot	DBT + med=12 DBT + plac=12
(14) McMain, Links, Gnam, Guimond, Cardish, Korman, Streiner	2009	A Randomized Trial of Dialectical Behavior Therapy Versus General Psychiatric Management of Personality Disorders	DBT=90 GPM=90

* = RCTs where BPD was not explicitly part of the inclusion criteria; **DBT** = Comprehensive DBT; **TAU** = Treatment as usual; **DBTI** = DBT-informed treatment; **CCT** = client-centered therapy; **WL** = wait-list; **D-M** = modified DBT; **CVT + 12** = comprehensive validation plus 12=step therapy; **med** = medication; **CTBE** = community treatment by experts in suicide and BPD; **DB?** = not enough information provided to determine comprehensiveness of DBT; **ST** = supportive treatment; **TFP** = transference-focused psychotherapy; **plac** = placebo; **GPM** = general psychiatric management

Five meta-analyses and other reviews supporting DBT were also found, and they can be viewed in Table 2.

Table 2: Meta-Analyses and Reviews of DBT Data

Authors	Date	Summary
Kliem, Kroger, Kosfelder	2010	Examines RCTs on DBT, but only those examining BPD, including RCTs 1,2,4,7,8,11,13. Approximate total n=578.
Lynch, Trost, Salsman, Linehan	2007	Examines all RCTs on DBT, including RCTs 1-11 in Table 2. Approximate total n=469.
Binks, Fenton, McCarthy, Lee, Adams, Duggan	2006	Examines all psychosocial treatments for BPD. Despite its relatively recent publication, however, the systematic review was conducted in 2002. Includes only RCTs 1,2,4,7,8, approximate n=183
Robins, Chapman	2004	Examines RCTs on DBT, including 1-9 in Table 2, Approximate total n=326.
Hayes, Masuda, Bissett, Luoma, Guerrero	2004	Examines RCTs on DBT, Acceptance and Commitment Therapy, and Functional Analytic Psychotherapy. Includes RCTs 1-2 and 4-8 in Table 2. Approximate total n=278

Other BPD-specific treatments have been supported by RCTs, including standard CBT, schema-focused therapy, mentalization-based therapy, and transference-focused therapy (Gunderson & Links, 2008; Paris, 2009). However, alternative BPD-specific treatments lack the same volume of supporting evidence in comparison to DBT (Binks et al., 2006; Federici & McMain, 2009), causing the Substance Abuse and Mental Health Services Administration (SAMHSA) to consider DBT “one of the best, if not the best treatment for BPD” (SAMSHA, 2010, p. 21).

In addition to DBT’s robust evidence, assistance in actualizing the treatment is readily available. Books that provide detailed, step-by-step instructions of all or some DBT protocol, including suggestions for implementation include:

1. Cognitive Behavior Therapy for Borderline Personality Disorder (Linehan, 1993a)
2. Skills Training Manual for Treating Borderline Personality Disorder (Linehan, 1993b)

3. Dialectical Behavior Therapy in Clinical Practice (Dimeff & Koerner, 2007)
4. Doing Dialectical Behavior Therapy (Koerner, 2011).

Detailed instructions and trainings for carrying out DBT are also available through organizations such as Behavioral Tech, LLC, a non-profit DBT training operation that assists new individual therapists and teams, experienced teams, and those seeking to implement DBT into a mental health system (www.behavioraltech.org, 2012).

With innovations such as an Intensive Training Model (ITM; Landes & Linehan, 2012), online trainings (www.behavioraltech.org, 2012), online peer supervision (Worrall & Fruzzetti, 2009), and mobile phone applications (Rizvi et al., 2011), DBT proponents are respected as particularly successful disseminators of EBT technology (McHugh & Barlow, 2010).

Given the high risk and prevalence rates associated with those in need of DBT as well as the advanced assistance available for carrying out the treatment, DBT should be widely utilized. Like other EBTs, however, DBT remains underutilized. Understanding the barriers and facilitators to implementing DBT can help to illuminate and change this disconnect. Before exploring such factors, however, “successful DBT implementation” must be defined.

Definition of dialectical behavior therapy. DBT is derived from a complex combination of cognitive, behavioral, and Zen approaches (Linehan, 1993a; Linehan, 1993b). It began with Marsha Linehan’s attempts to apply cognitive behavioral therapy (CBT) to chronically suicidal patients, so that a large portion of DBT involves techniques such as problem solving, exposure, contingency management,

and cognitive modification (Linehan, 1993a). Behavioral techniques such as shaping and reinforcement are especially used to elicit more adaptive behaviors (Lynch et al., 2007). However, cognitive and behavioral techniques were thought to be insufficient when administered in isolation. Zen-inspired strategies such as observing, mindfulness, and absence of judgment were employed to increase validation and patient motivation (Linehan, 1993b). CBT and Zen are two philosophies with extensive writings and will not be explored in full here. However, both must be underscored, as techniques derived from each serve DBT's primary goal of helping individuals to engage in life-enhancing functional behavior in spite of intense emotions (Lynch, Chapman, Rosenthal, Kuo, & Linehan, 2006).

As its name suggests, DBT also derives much of its philosophical base from dialectical philosophy, which binds together the vastly different strategies from CBT, behaviorism, and Zen (Dimeff & Koerner, 2007). According to DBT, the change messages implied by cognitive and behavioral techniques can send implicitly invalidating messages to clients when administered in isolation. Conversely, validation techniques lack the ability to produce the change necessary for eliminating behaviors such as non-suicidal self-injury (Linehan, 1993a). A dialectical stance that equally values both the acceptance emphasized by Zen *and* the change produced by CBT provides "a practical means to regain and retain psychological flexibility and balance so that therapeutic movement is possible" (Koerner, 2011, p. 140). Beyond acceptance and change, dialectics can be seen in almost every aspect of DBT, from case conceptualization to techniques for engaging patients and treatment goals (Linehan, 1993b).

Accompanying its flexible, multi-theoretical base, DBT has developed a fairly structured and complex form of treatment. Robins and Chapman (2004) outline six defining elements that are consistent with the literature and must be present for a treatment to be considered DBT:

- (1) A biosocial theory of pathology
- (2) A conceptual framework of stages of treatment
- (3) A clear prioritizing of treatment targets within each stage
- (4) Delineation of the functions treatment must serve
- (5) Different treatment modes that fulfill those functions
- (6) Several sets of acceptance, change, and dialectical treatment strategies (p. 74).

Brief descriptions of each element are as follows:

1. Biosocial theory. DBT posits that the maladaptive thoughts, feelings, and behaviors responsible for BPD's emotional dysregulation are a product of an interaction between an individual's biological factors and an invalidating environment (Fruzetti, 2002; Linehan, 1993a). Such a framework has many implications. For instance, the often-stigmatized behaviors associated with the BPD diagnosis (Gunderson, 2009) are normalized when viewing maladaptive coping strategies as natural responses to difficult circumstances. Also, acknowledgement of an invalidating environment in childhood emphasizes the need for creating a more validating environment in treatment.

2. Stages of treatment. Linehan (1993a) outlines four distinct stages of treatment. In the first, individuals develop behavioral control and stop life threatening and treatment interfering behaviors. Second, the appropriate

experiencing of emotions is increased. Third, “ordinary” levels of emotions, improved relationships, and increased self-esteem are attained. Finally, treatment moves away from problem solving and toward an increased sense of connectedness, joy, and freedom.

3. *Prioritized treatment targets per stage.* Each stage has specific goals that are precisely defined, measurable, and prioritized hierarchically. From highest to lowest priority, the first stage’s targets are: (1) the decrease of life-threatening behaviors, (2) the decrease of treatment interfering behaviors, (3) the decrease of life-interfering behaviors, and (4) increasing skill utilization (Koerner, 2011; Robins & Chapman, 2004).

4. *Functions.* According to Lynch et al. (2007), every aspect of DBT is meant to serve at least one of its five functions: (1) enhance patient capabilities, (2) increase patient motivation, (3) enhance generalization of newly acquired skills into the natural environment, (4) structure the patient’s environment, and (5) enhance therapist capabilities and motivation (p. 184).

5. *Modes.* To serve the five functions, four modes of treatment delivery are typically employed: (1) weekly individual psychotherapy, (2) weekly skills training groups, (3) coaching between sessions when needed, and (4) weekly therapist clinical team meetings (Robins & Chapman, 2004). Each mode is closely tied to DBT’s five functions. Between-session coaching is meant to enhance generalization

of learned strategies into the natural environment, while clinical team meetings maintain therapist motivation. Compared to other elements, adherence to the modes is a relatively visible litmus test for whether a practice offers comprehensive DBT. Any practice that does not offer group skills training cannot be performing the empirically validated version of DBT. However, because of differences between inpatient, outpatient, and other settings, modal adherence must also be assessed in conjunction with adherence to the functions (Landes, Comtois, & Linehan, 2011). For example, an outpatient practice might offer telephone coaching between sessions, while an inpatient unit may offer face-to-face delivery. Because between-session coaching is meant to enhance generalization, both practices may be considered compliant with this function.

6. ***Acceptance, change, and dialectical strategies- DBT protocol.*** Each stage, target, and mode contains behaviorally anchored acceptance, change, and dialectical strategies. To underscore the importance of this element, Linehan (1993a) states, “The core of the treatment is the application of problem-solving strategies balanced by validation strategies” (p. 99). Acceptance strategies include six distinct levels of validation, each clearly operationally defined (Linehan, 1997). Behavioral chain analyses, skills training, exposure techniques, and contingency management procedures are examples of change strategies. Dialectical strategies include reciprocal and irreverent communication styles (Koerner, 2011), including specific techniques such as entering the paradox, metaphor, devil’s advocate, extending,

activating wise mind, making lemonade, and allowing natural change (Koerner, 2011; Linehan, 1993a).

Implementation outcomes (dependent variable). Only treatment employing the elements in full can be considered comprehensive DBT. The majority of supporting RCTs defined DBT in this way, so that the effectiveness of partial use of the elements is uncertain. The application of incomplete DBT risks losing its change-producing agents, as the treatment's internal mechanisms of change are unknown (Lynch et al., 2006). According to Dimeff and Koerner (2007), adapting DBT from its comprehensive form increases legal risks and decreases credibility. However, efforts are currently underway to test adapted forms, and alternative forms of DBT may prove effective (Miga, Karlson, & Dubose, 2013).

The majority of current data supports all DBT elements in full, so the most desirable end goal of DBT implementation should include complete utilization of all elements. Because implementation includes real world EBT utilization, each currently employed element demonstrates an aspect of successful DBT implementation. As more elements of DBT are used, the more DBT has been implemented. Therefore, measuring currently employed DBT elements is a valid reflection of DBT implementation processes that have already taken place.

To measure the amount of currently utilized elements, DBT proponents have developed the Program Elements of Treatment Questionnaire (PETQ) as a tool to capture and code the core DBT elements used in routine clinical settings (*See Appendix B*). Developed in the effort to determine accreditation of DBT practices,

The PETQ is intended to measure the amount of DBT a practice currently offers. By using this questionnaire, aspects of successful implementation can be measured and quantified, so that high scores reflect utilization of many DBT elements in real world practice and low scores reflect less utilization.

However, measuring successful DBT implementation in such a way must be considered exploratory until more is known about which aspects of successful DBT implementation translate into effective results. This is significant because the relationship between successful EBT implementation in real-world practice settings and client outcomes has yet to be empirically confirmed (Webb, DeRubeis, & Barber, 2010). Other factors that represent successful implementation may also apply. For example, adherence to few elements may be more important than utilizing many elements with little adherence. However, due to the time and resources needed to be more specific, methods for measuring in-session adherence have yet to transfer from research to natural practice settings (Landes et al., 2011). Therefore, the PETQ only measures the quantity of elements used, not their quality. With only one aspect of implementation captured by the PETQ, results must be interpreted with caution.

Implementation Science

Even though much is understood about DBT, many practices do not offer it. While DBT has been adopted in 31 states and 12 countries (Linehan, Manning, & Ward-Ciesielski, 2008), these data conversely suggest that as recently as 2007, up to 19 entire states and 184 countries did not offer the current gold standard EBT for concerns as severe as suicidality. Because DBT is (a) prescribed for prevalent and

high-risk populations, (b) particularly innovative in its dissemination and training efforts (McHugh & Barlow, 2010), (c) likely cost-saving (Miga, Kraslow, & Dubose, 2013), and (d) largely unavailable to many individuals, the treatment makes a particularly intriguing case study of EBT neglect.

Because so much detailed DBT knowledge exists- including available and advanced assistance in implementing it- contextual factors surrounding and influencing DBT utilization are particularly worth investigating. Specifically, this inquiry examines the interaction of practice settings and DBT implementation, as host settings are a significant part of the context in which implementation occurs.

Having such knowledge could inform DBT proponents interested in actualizing the treatment while encouraging a more nuanced view for those skeptical of comprehensive DBT's feasibility. Perhaps reflecting the current stance of some mental health professionals, Federici and McMain (2009) state, "most clinical settings lack the resources to apply the comprehensive package" (p. 1). However, such a sentiment cannot be supported without scientific examination of which aspects of practice settings- including but not limited to resources- impact DBT implementation and how. In the absence of such knowledge, DBT's generalizability has been described as uncertain (Paris, 2009, p. 282), and the author of this inquiry holds the position that a more nuanced, evidence-based understanding of the interaction between practice setting constructs and DBT implementation is more informative than sweeping assessments of the treatment's feasibility. For example, as suggested by Torrey, Bond, McHugo, and Swain (2012),

leadership is a vital facilitator of successful EBT implementation, while the impact of barriers such as staffing and funding remain uncertain.

While the current research can specifically inform DBT utilization, it is also congruent with the broader goals of implementation science, which seeks to understand the factors associated with the integration of EBTs into practice settings (National Institute of Health; NIH, 2011). However, implementation science currently suffers from a lack of consistent terminology across the field, posing a significant challenge to scientific inquiry. Even the term “implementation science” has not been universally adopted to describe the field of study. According to the Institute of Health Economics (2008), the research-to-practice arena has been referred to as quality assurance, quality improvement, knowledge translation, knowledge transfer, knowledge translation and exchange, decision support, performance support, technical assistance, research utilization, health services, dissemination and implementation research, and continuing education research. If historical consensus has not occurred for the very name utilized by the discipline, one can imagine how many more terms exist to describe each complexity involved in innovation utilization.

Adding to the confusion caused by inconsistent implementation language, generating hypotheses is deceptively difficult, with a massive amount of possible forces thought to influence implementation. Practice settings alone represent thousands of variables, consisting of complex webs of people, places, and things. Each is a potential barrier or facilitator to DBT implementation. Factors such as a setting’s culture, facilities, leadership, values, funding source, and many others may

all impact the implementation of interventions, so that systematic selection of targeted aspects of practice settings is imperative.

Therefore, defining, selecting, and measuring practice setting constructs thought to influence DBT implementation present the largest challenges to this study. Luckily, recent advances have begun to resolve terminological and conceptual differences. First, the term “implementation science” has been increasingly adopted to describe the discipline, as evidenced by the launching of an academic journal with the same name in 2006 (Kauth et al., 2011). Other signals provide evidence of a discipline gaining momentum and consensus, such as the National Institute of Health (NIH) holding its fifth annual conference on the Science of Dissemination and Implementation on March 23, 2012 (The Hill Group, 2012). Second, The Consolidated Framework for Implementation Research (CFIR) was developed and published in the *Implementation Science* journal in 2009 (Damschroder et al., 2009). Through implementation science and the CFIR, practice-setting constructs can systematically be selected, measured, compared to DBT implementation outcomes, and explored through qualitative inquiry.

The Consolidated Framework for Implementation Research. Considered an overarching framework, the CFIR was developed through a process of analyzing and combining 19 pre-existing implementation theories. Each of the 19 theories similarly attempted to list and define factors thought to influence implementation discovered across disciplines. To resolve the differences remaining between them, the CFIR combines the theories by consolidating similar constructs, separating and

delineating differences, and including missing constructs from one theory to the next in one exhaustive framework (Damschroder et al., 2009). By doing so, large amounts of previously fragmented knowledge are organized in one comprehensive list of factors thought to influence implementation, and each construct is defined in an effort to develop common terminology. “The CFIR specifies a list of constructs within general domains that are believed to influence (positively or negatively...) implementation” (Damschroder et al., 2009, p. 3).

Such a structure is incredibly useful. According to Damschroder and Hagedorn (2011), the CFIR enables implementation researchers to “see further through the complex array of influences on implementation by bringing together constructs developed across many different scientific disciplines into a single framework for pragmatic and scientific application” (p. 195). Experts recommend it for its ability to align researchers with the larger body of implementation literature previously scattered across disciplines. Beidas et al. (2011) state, “Going through the checklist provided by the CFIR framework serves to augment hypotheses, acknowledges contextual factors, and addresses measurement strategies” (p. 233). The CFIR, therefore, offers a systematic tool for generating hypotheses about the factors that influence DBT implementation.

To simplify the list of constructs, the CFIR is organized into five major domains: (1) the intervention itself, (2) the inner setting (practice setting), (3) the outer setting (the context surrounding a practice setting), (4) the individuals involved with implementation, and (5) the process of implementation

(Damschroder et al., 2009). Abbreviated definitions of each domain are included in Table 3.

Because the CFIR identifies factors thought to influence implementation, the five domains contain clusters of hypotheses for potential implementation barriers and facilitators to DBT utilization. To illustrate this point, included in Table 3 are CFIR-generated examples of possible barriers and facilitators to DBT implementation, each corresponding with a particular domain. These examples are meant to illustrate the meaning of each domain while simultaneously demonstrating the utility of the CFIR in hypothesis-generation.

Table 3: The Five Major CFIR Domains

CFIR Domain	Definition	Examples of Corresponding CFIR-Generated Hypotheses: possible barriers and facilitators to DBT-implementation
Intervention Characteristics	Characteristics of the intervention being implemented	Facilitator: DBT's strong empirical support Barrier: DBT's high degree of complexity
Outer Setting	The economic, political, and social context in which an organization resides	Facilitator: A political environment pushing evidence-based practice Barrier: Social stigma toward BPD
Inner Setting	Structural, political, and cultural contexts within the implementing practice or organization	Facilitator: A collective team enthusiasm for DBT Barrier: A practice's funding source does not reimburse for each mode.
Characteristics of Individuals	The individuals involved with the intervention and/or implementation	Facilitator: A clinician has a previous orientation toward CBT Barrier: A clinician lacks empathy toward self-injury
Process	The active change process aimed to achieve individual and organizational use	Facilitator: Following DBT's intensive-training model Barrier: Trying to implement all DBT elements at once

Domains and definitions from Damschroder et. al. (2009). For a complete list of CFIR constructs with short definitions, see "Appendix A"

The examples of CFIR-generated hypotheses shown in Table 3 are far from exhaustive, as only small aspects of each domain are represented. By combining knowledge of DBT with the complete version of the CFIR (i.e. all of the constructs and subconstructs within each domain), many more hypotheses are possible. For the entire CFIR with short definitions, see Appendix A. With so many barriers and facilitators to DBT implementation suggested by the CFIR, exploration of every construct of every domain would represent a comprehensive exploration. Doing so in one study is daunting, and the proposed research will narrow its frame by focusing on one domain: the inner setting. As previously discussed, the connection between practice settings and DBT implementation is particularly important and will be the focus of this research.

Aspects of practice settings (independent variables). “Inner setting, or environment within an organization or clinic in which an intervention will reside can act as a barrier to, or facilitator of an intervention” (Lash et al., 2011, p. 244). In support of this statement, Beidas and Kendall (2010) found that organizational support is an important ingredient in facilitating the utilization of evidence-based practices, and it is the most commonly cited barrier to DBT implementation (Swales, Taylor, & Hibbs, 2012). Therefore, understanding how practice settings interact with implementation is paramount to successful incorporation of an innovation into routine clinical use. The inner setting CFIR domain- synonymous with “practice setting”- can assist in locating and defining aspects of organizations and practice settings that possibly influence DBT implementation. Still, a surprisingly

complicated network of variables remains (Taxman & Belenko, 2012). For a complete list of CFIR inner setting constructs, see Appendix A.

When considering how to measure each CFIR-generated aspect of inner setting, several methodological complications emerge. First, the definition of inner setting itself is imprecise. “The line between inner and outer setting is not always clear and the interface is dynamic and sometimes precarious” (Damschroder et al., 2009, p. 5). For example, while third-party payers exist in the outer setting, funding source exists in the inner setting. They are nearly identical constructs, with a slight shift of perspective distinguishing them from each other. Such nuances become even more complex when considering the diverse settings occupied by DBT providers. Many DBT practitioners work in small private practices as a standalone treatment team, while other teams are nested within large institutions. Both inner settings have very different sets of variables, such as an upper management structure in some but not all practices.

Second, because much of the existing literature was generated before publication of the CFIR in 2009, researchers did not use the CFIR inner setting terminology in the same way. Literature searches for each construct reflect this prior lack of consensus, especially the “culture,” “implementation climate,” and “readiness for implementation” constructs. For example, “Some researchers have a relatively narrow definition of culture, while other researchers incorporate nearly every construct related to inner setting” (Damschroder et al., 2009, p. 8). The meaning of climate varies even more across the literature, raising issues such as distinguishing it from culture, differences between psychological and organizational

climate, and determining how to best measure it (Thumin & Thumin, 2011). For example, Fixsen et al. (2005) cite “levels of stress, safety, feeling empowered to make decisions” as examples of climate (p. 63), yet such a definition arguably does not precisely fit with the CFIR’s notion of implementation climate. Weiner, Belden, Bergmire, and Johnston (2011) verify these differences, stating, “Researchers have sometimes treated implementation climate as synonymous with related, yet distinct constructs such as receptive organizational context, supportive organizational context, and organizational culture” (p. 2).

Third, some aspects of inner setting are concrete while others are less so, making equally reliable and valid measurement of both difficult. For instance, objective aspects of practice settings, such as “age,” “physical space,” and “money” can be understood in tangible, quantifiable terms, such as the number of years, rooms, and dollars. Other constructs are more subjective, including terminology such as “perception,” “meaning,” and “values.” These psychological aspects are vitally important, but more difficult to measure. To complicate matters further, subjective phenomena is often linked to objective aspects, so that delineations can be challenging. For example, “cost” can be easily understood in dollars, yet the subjective interpretation of its meaning may be equally important (Tornatzky & Klein, 1982).

To resolve these difficulties, four steps will be taken. First, the CFIR’s definition of “inner setting” will be applied strictly, while its constructs and subconstructs will be interpreted more loosely. For example, if an instrument’s definition of “culture” differs from the CFIR’s, it is still considered if it fits within the

“inner setting” domain. Second, to analyze inner setting variables across DBT settings, each construct will be primarily quantified at the team level. This will improve consistent measurement across DBT practices, because most organizations offering DBT will still have DBT teams while not all teams will have surrounding organizations. Third, to capture psychologically oriented, difficult-to-measure constructs, only previously developed instruments with established reliability and validity will be employed. Fourth, in consideration of instruments, an emphasis will be placed on their practical utility (i.e. number of items, congruence of language with DBT, etc.) over their nuanced conceptualization, as the proposed research intends to measure inner setting broadly and not resolve terminological disputes.

Using the CFIR as a systematic checklist for inner setting constructs in conjunction with these four steps allows for the development of a survey to collect quantitative data and an interview guide to collect qualitative data. In the quantitative survey, as many inner setting variables will be collected as possible. Concrete aspects, such as team size, can be easily and reliably measured. To measure intangible, psychological aspects of inner setting, the short version of The Team Climate Inventory (TCI-14; Kivimaki & Elovainio, 1999) and two subscales of the Organizational Readiness for Change scale (ORC; Lehman, Greener, & Simpson, 2002) were selected.

Specifically, the ORC’s “cohesion” and “communication” subscales were employed to represent aspects of the CFIR’s “networks and communication” construct. The TCI-14 was used to capture team-level aspects of culture and climate pertaining to innovation use, including vision, participative safety, task orientation,

and support for innovation (Kivimaki & Elovainio, 1999). However, the difficulties of measuring culture must be underscored, and the TCI-14 only captures a small portion of these constructs. According to Weiner et al. (2011), implementation climate currently lacks a standard instrument for measurement, and most tools that exist “contain items specific to information systems implementation that have questionable relevance for implementation research in health and human services” (p. 7). The TCI-14’s conceptualization of “vision,” “task orientation,” and “support for innovation” appear loosely representative of portions of “implementation climate,” while not providing comprehensive analysis of each “implementation climate” subconstruct. However, such an assertion may be debatable. In addition, the PETQ “supervision” subscale (*discussed earlier*) measures an aspect of organizations, and it too represented an independent variable.

In all, 22 inner setting aspects were quantified. Seventeen CFIR-generated questions were developed by the author to produce inner setting variables. Two more inner setting variables were captured by ORC subscales, one by the TCI-14 (its four subscales may also be considered as four more variables), and another two by the PETQ. These aspects, however, must be considered incomplete, as significant portions of inner setting, especially culture, climate, and readiness for implementation could not be quantified at this time. To elaborate on the collected quantitative data, qualitative analysis was employed to validate quantitative findings and explore the field more broadly.

Hypothesis for Quantitative Research

Because the CFIR represents literature-supported inner setting constructs thought to influence implementation, and because utilization of DBT elements represents an aspect of successful implementation, comparison of the two allows for cautious identification of barriers and facilitators of DBT implementation. With both (1) inner setting aspects (i.e. potential barriers and facilitators) and (2) current employment of DBT elements (i.e. implementation outcomes) quantified, comparisons of the two variables can begin to test for the interaction of practice settings and DBT implementation. Therefore, the hypothesis for quantitative research is: “Inner setting variables will be statistically associated (positively or negatively) with DBT implementation outcomes.” Aspects of inner settings positively associated with increased utilization of DBT elements can be cautiously interpreted as facilitators to DBT implementation. Aspects of inner settings negatively associated with increased utilization of DBT elements can be cautiously interpreted as barriers to DBT implementation. Further details on the necessity of cautious interpretation will be outlined in the “Discussion” section (*below*).

Such an inquiry is highly congruent with the goals of implementation science. According to the NIH (2011), “Implementation research seeks to understand the factors associated with integration of evidence-based interventions in particular settings (e.g. worksite or school) and also examines whether the components of the original intervention were faithfully transported to the real-world setting” (para. 5).

Methods

Execution of the research was completed in three stages.

Stage 1: Survey Development and Piloting

First, the dependent variables (i.e. aspects of practice settings that may act as barriers or facilitators to DBT implementation) were identified and quantified. To do so, each inner setting construct of the CFIR was independently used as a search term in Google Scholar, along with terms such as “measure,” “measurement,” “scale,” “inventory,” “instrument,” “questionnaire,” and “implementation.” Many existing measurement tools were located but rejected because (a) they did not fit within the CFIR-defined inner setting frame, (b) their organizational language was deemed incongruent for DBT-teams across settings, (c) their items were specific to situations incompatible with DBT implementation, such as an instrument targeting medical students, and (d) their cumbersome length was thought to deter respondents. The search yielded the TCI-14 and two ORC subscales.

Developed in 1994, the original Team Climate Inventory (TCI) can be described as “a multi-dimensional measure of facet-specific climate for innovation within groups at work” (Anderson & West, 1998, p. 235). It contains 38 items and four subscales capturing “vision,” “participative safety,” “task orientation,” and “support for innovation.” According to Brennen, Bosch, Buchan, and Green (2013), out of 192 analyzed instruments for team-level determinants of quality improvement in healthcare, the TCI was the only one to possess multiple tests for construct validity. Kivimaki and Elovainio (1999) developed a shorter, fourteen-

item version (TCI-14) with the same subscales, and tested it on two Finnish samples. Loo and Loewen (2002) tested an English version of the TCI-14 on a Canadian sample and found high alpha coefficients at both administrations (0.90 and 0.93). They conclude, “there is support for the short version and its use when the use of the full version is not practical” (Loo & Loerhen, 2002, p. 263).

The ORC is a measure commonly employed by implementation researchers. Developed by Lehman et al. (2002) at Texas Christian University, it represents an “an important step in studying the process of technology transfer of evidence-based substance abuse treatment interventions to every-day counseling practices” (p. 197). The ORC consists of 18 subscales, and its reliability has been tested with both directors and staff. At the program level, its alpha coefficients for the “Cohesion” and “Communication” subscales are reported as 0.92 and 0.82, respectively (Lehman et al., 2002, p. 203)

After selecting these two measures, the CFIR was used as a checklist to capture other aspects of inner settings not captured by the TCI-14 or ORC subscales. To assist the CFIR in targeting DBT implementation, barriers identified by the expert opinions of Swenson et al. (2002) were listed and coded for the corresponding domain of each. Two conversations with Tony DuBose, Psy.D., Director of Training, Dissemination, and Implementation at Behavioral Tech, LLC, also assisted in matching DBT-specific concerns about practice settings with CFIR-constructs. When possible, barriers associated with the inner setting domain were used in conjunction with the CFIR to formulate close-ended questions to generate

quantifiable data. For a complete list of how each inner setting variable is measured, see Appendix C.

In addition to determining the measurement of inner setting variables, the measurement of implementation outcomes was determined by the PETQ, found in Appendix B. As previously mentioned, the PETQ is a self-report questionnaire developed by DBT proponents in an effort to determine accreditation of DBT practices, by measuring the quantity of DBT elements utilized in routine clinical settings. Currently, it lacks an official scoring matrix and established reliability. Because it is so new, it had to be scrutinized more closely than other measures.

First, Andre Ivanoff, Ph.D., President of Behavioral Tech and co-creator of the PETQ, and Erin Miga, Ph.D., an employee of Behavioral Tech, were consulted for optimal scoring procedures. All “yes” answers were scored with a “1,” and all other answers were scored with a “zero.” In addition, each of the fourteen PETQ subscales were analyzed for inclusion:

1. Program Elements Specific to DBT
2. Program Consultation Team
3. Client Treatment and Support
4. DBT Tracking of Treatment Outcomes
5. Documentation of Treatment
6. Outpatient Treatment
7. Milieu Treatment/ Day Program Comprehensive Treatment
8. Inpatient/ Residential Program
9. DBT Adaptation
10. DBT Staff Hiring and Development
11. Program Description
12. Training of Providers and Support Staff
13. Provides Ongoing Supervision,
14. Assesses and Facilitates Fidelity of Programming

While most PETQ subscales measure elements of DBT currently offered by clinical teams (i.e. the dependent variable), some scales measure aspects of inner settings

(i.e. the independent variable). To resolve this issue so that implementation outcomes were measured and not inner setting variables, the author coded each subscale as (a) measuring an employed/ implemented DBT element, (b) measuring an aspect of inner setting, or (c) measuring something else. The first five subscales were determined to represent the dependent variable, and they apply to all respondents. The next three subscales also represent dependent variables, but they only apply to some respondents. The ninth and tenth subscales were coded as “measuring something else.” They were included with the study for possible further analysis. Subscales 11-14 were determined to measure inner setting variables and not DBT implementation. Subscales 11, 12, and 14 were omitted due to their length or lack of congruence with the CFIR. Subscale 13, the “provides ongoing supervision” subscale, was included as an independent variable.

The final score of the total PETQ was calculated as a percentage of “yes” answers from the first five subscales. Corresponding subscales for “outpatient,” “milieu...,” or “inpatient...” settings were also factored into the total PETQ score. Each individual subscale was similarly calculated as a percentage of “yes” items.

In addition to the PETQ, eight questions inquired about the following modes: (1) individual therapy, (2) group skills training, (3) skills coaching/ telephone consultation, (4) therapist consultation team, (5) individual skills training, (6) DBT pharmacotherapy, (7) DBT case management, and (8) DBT support/ group process therapy. Respondents were asked if their program offers each aspect, selecting from the choices yes, some, planned, or no. This information was gathered to describe the sample.

All survey items developed by the researcher were refined through interviews with two colleagues in two different DBT settings. One colleague was an individual practicing in a small private practice. The other was an individual representing a large organization. The researcher inquired about the meaning of each question in order to determine if each item accurately reflected its intended meaning. Each question was read aloud to the interviewee, the question was answered, and then each question was discussed. As recommended by Fowler (1995), the discussion was guided by questions such as:

1. Using your own words, can you paraphrase your understanding of the question?
2. Can you please define _____ (insert a term used in a question).
3. Did you experience any uncertainty or confusion about what the appropriate answer was?
4. How confident are you that you gave an accurate answer?
5. If asking for a numerical answer- how did you arrive at your answer? (p. 112).

Information gathered from these interviews was used to improve the quality of survey questions.

Once the survey questions were refined, field pretesting and piloting occurred. For this stage, the survey was formatted and placed on Survey Monkey. Three colleagues completed it on Survey Monkey, and debriefing interviews occurred upon completion. This step enabled evaluation of the survey as a whole, with the primary goal of increasing the probability that respondents would complete the lengthy survey in its entirety. Debriefing questions included: Is the length of the survey appropriate? Did you want to terminate the survey at any point? If so, when and why? How does the survey flow? How engaging is the survey? How could engagement improve? Did you feel properly oriented to each

section? How do you feel the questions were formatted? Information from the field pretesting was used to format the survey and improve its overall format and flow.

Upon completion of field-testing and appropriate formatting changes, the entire survey was piloted with four more individuals.

Stage 2: Quantitative Measurement

Once finalized and piloted, the survey was posted on Survey Monkey and open to respondents.

Respondents. One hundred and four self-selected respondents began the survey. Seventy-nine respondents completed it. Inclusion criteria included:

1. Individuals who have completed intensive DBT training through Behavioral Tech, LLC. This criterion ensured that all respondents had high quality DBT training. Criteria for intensive DBT training are specified by Behavioral Tech (www.behavioraltech.org). To complete the training, DBT teams must attend with a minimum of four individuals and a maximum of ten. Intensive training includes two five-day trainings separated by six months of self-study (Landes & Linehan, 2012). Requiring intensive training was meant to homogenize the sample by increasing the likelihood respondents possess a minimum amount of DBT knowledge. Containing such knowledge partially controls for the “individual characteristics” CFIR domain.

2. Individuals who completed the final portion of intensive training- the second of two five-day trainings- at least one year prior to the completion of the survey. This time frame was chosen to partially control for the “process” CFIR domain by eliminating practices that have had minimal time to implement.
3. Respondents must speak English. This criteria was chosen for practical considerations.

Each respondent answered questions on behalf of his or her practice.

Recruitment. Respondents were recruited primarily through a series of recruitment emails distributed through the DBT listserv, an email chain for DBT therapists practicing on a team. DBT teams were also located through the Behavioral Tech, LLC website, and individual recruitment emails were sent. One other email was distributed through the Association of Behavioral and Cognitive Therapies (ABCT) listserv. In all recruitment emails, information was provided concerning a brief description of the study, approximately how long survey completion would take, and the reward for completion (*see below*). Informed consent was obtained before beginning the interview.

Retention, participant payments, tracking procedures. Participant retention began in the recruitment email distributed to the listserv. The language was courteous, appreciative, and informative when explaining the research and

obtaining consent. Data were collected by Survey Monkey and downloaded into SPSS format.

All who completed the survey were entered into a lottery to win one of three prizes: \$150, \$75, or \$25. Such a reward was offered only for survey completion as incentive to complete it in its entirety.

Data on refusals and dropouts. Refusals were considered as those who either (a) did not begin the survey, or (b) did not offer informed consent. No refusal data were collected. Non-completers were those who gave consent and began the survey, but did not complete it (n=25).

Stage 3: Qualitative Interviews

To bolster the quantitative data, 20 qualitative interviews were conducted via Skype, employing CFIR's inner setting language whenever possible. See Appendix D for the interview guide. Due to participants' lack of implementation knowledge, the interviewer regularly deviated from the guide. In most interviews, the guide was used as a checklist to ensure that all major inner setting constructs were discussed.

Participants. The inclusion criteria were the same as for the quantitative respondents, as participants were a subset of the survey respondents. The sample was smaller for qualitative participants (n=20) than quantitative respondents (n=79) due to the nature of each method. Three participants were primarily

administrators or trainers, nine were team leaders, and eight were team members. Six represented private practice settings, six represented community mental health centers, two represented college counseling centers, and two purveyors of large-scale implementation projects. The remaining four participants represented an inpatient setting, a residential setting, a dual diagnosis unit, and a criminal justice program. Most of the participants had multiple roles and experience in more than one setting. All but three participants currently practice in the United States.

Recruitment. Selection of qualitative participants occurred through the quantitative Internet survey. Upon completion, a final question asked respondents if they would be interested in further participation in the research. An email requesting an interview was sent to (a) those who indicated that they were “definitely interested” in a follow up interview, and (b) international respondents who indicated that they “might be interested.”

Retention, participant payments, tracking procedures. The retention of participation began in the recruitment email for quantitative research distributed to the listserv. The language was courteous, appreciative, and informative when explaining the research and obtaining consent. Retention continued through the survey, by designing the survey to encourage continued participation as much as possible (*see above*). Finally, further participation was encouraged in a final set of questions in the online survey, asking survey respondents if they would be willing to participate further.

To bolster retention: (1) Participant contact information was gathered in the online survey, (2) Participants were asked for a time and phone number for the interview, and (3) ample time (5 months) was allowed for data collection.

Tracking information was organized automatically via Survey Monkey. Data, including names, phone numbers (primary and backup), address, and other identifying information were collected in the online survey, enabling scheduling of the interviews.

Interviews. The qualitative interviews were collected sequentially, after the survey data were collected. Interviews began with the start of quantitative data collection, and continued until the data collection time constraints were met (5 months). Each interview was conducted via Skype for approximately one hour and recorded digitally with participant awareness and consent.

Each interview contained five major components. (1) Consent to research participation was reviewed using the Consent Form already agreed to in the Internet Survey; (2) Open and close-ended questions were asked to explore each participant's practice setting; (3) Open and close-ended questions were asked about each participant's DBT implementation outcomes; (4) Open-ended questions were asked to explore the interaction between their settings and their implementation; and (5) The interview closed with some debriefing. For elaboration of topics and questions asked, consult Appendix D. Each participant was sent a \$10 gift certificate to Starbucks as an appreciation for participating.

Data on refusals and no-shows. Refusals and no-shows were kept in the tracking system for data purposes. Eight individuals expressed a desire to participate in the interview in the survey but did not respond to a follow-up email.

Piloting. The interview guide was piloted on two participants prior to the start of data collection to increase quality.

Reflexivity Statement

I have been a practicing mental health provider in the Philadelphia area since 2003. As a cognitive-behaviorally trained therapist with primary clinical interests in complex trauma, suicidality, non-suicidal self-injury, and addiction, Dialectical Behavior Therapy (DBT) captured and held my attention. My theoretical orientation is mostly derived from DBT principles, such as its case formulation, treatment strategies, and dialectical worldview. I have experienced DBT as a powerful approach for taming the forceful emotional dyscontrol experienced by so many of my clients, and its empirical support further validates my experience.

But I do not employ DBT in my practice because I lack the team necessary for complete implementation. Unable to offer DBT alone, I have turned my attention to my surroundings, considering how to actualize DBT in my practice settings. I have been struck by so many differing opinions and reactions to DBT. Many colleagues speak in glowing terms of the treatment, yet my clients and I have had difficulty finding an affordable DBT skills group within reasonable distance. Worse, many of my clients have encountered therapists who have claimed to offer DBT, but who

appear not to offer many of its vital elements. Despite so much enthusiasm for the treatment, discussions with clinicians have led me to believe that many of my peers are either (a) unaware of what DBT is, (b) uninterested in using it, or (c) broadly skeptical of its feasibility.

Admittedly, I myself have wondered if DBT utilization was possible, as its structure and philosophy represent a radical departure from many of the settings I have observed. I spent years contemplating if DBT should change to fit practice settings or if practice settings should change to accommodate DBT. This view, however, has slowly shifted with years of witnessing frustrated peers discuss their most challenging cases. I have seen how hard they work, how upset they get, and how much money is spent on the “revolving doors” of crisis treatment centers. Worse, I have witnessed the tragedy of neglected individuals at risk.

With all of the time, energy, money, and anguish spent on *not* offering DBT, I can no longer understand why all of these resources cannot be turned toward DBT implementation. I have stopped wondering *if* DBT is possible in practice settings. I am now more interested in *how* DBT is possible.

Upon beginning this inquiry, I was introduced to implementation science. On one hand, I have been saddened to encounter the larger reality that DBT is not the only neglected EBT. On the other, I am energized and hopeful that this emerging field may inform solutions.

These sentiments represent my inspiration for this research, but also my biases. Despite my biases in favor of DBT, I do not naïvely believe that its implementation is easy. This research is intended to inform the transition from DBT

knowledge to DBT practice, and I do not wish to contaminate the process by producing any results that are not reflective of reality, no matter how inconvenient.

Analysis

Quantitative

The independent variables include aspects of respondents' practice settings collected from the Internet survey. Each variable's operational definition and coding are listed in Table 4.

Table 4: Operational Definitions of the Independent Variables

Variable	Measure	Values
<i>Structural Characteristics</i>		
Organizational Affiliation	Is your DBT program a stand-alone entity (such as a private practice), or are you affiliated with a larger organization (such as a hospital or parent corporation)?	Stand-alone - 1 Nested - 2
Age of Team	How many years have at least two members of your current DBT team been practicing together as members of your team?	0-?
Time Since Training	How many years ago did your team complete intensive training?	0-?
Size of Team	How many individuals are members of your current DBT team?	0-?
Size of Program	How many individuals are directly involved with your DBT program (including team-members and non-team members, such as support staff)?	0-?
Level of Care	PETQ 50, 53, 58	1,2,3
<i>Networks and Communication</i>		
Team Meeting Consistency	In the last two months, has your DBT team missed any weekly clinical team meetings for any reason?	Yes - 1 No - 2
Cohesion	ORC "Cohesion" Subscale	5-30
Communication	ORC "Communication" Subscale	5-25
<i>IV: Culture and Climate</i>		
Climate for Innovation	TCI-14	14-70
<i>IV: Readiness for Implementation</i>		
Provides Ongoing Supervision	PETQ "Provides Ongoing Supervision" Subscale	0.00-1.00
Educational Background - Bachelors Level	How many individuals on your DBT team have less than a Masters degree?	(0-?)/Size of Team
Educational Background - Masters Level	How many individuals on your DBT team have a Masters degree, but not a Doctoral degree?	(0-?)/Size of Team
Educational Background	How many individuals on your DBT team have a	(0-?)/Size of Team

- Doctoral Level	Doctoral degree or more?	
Self-Pay	Does more than 1/3 of your practice's funding come from self-pay?	Yes - 1; No - 2; Unsure - 3
Private Insurance	Does more than 1/3 of your practice's funding come from private insurance?	Yes - 1; No - 2; Unsure - 3
Public Insurance	Does more than 1/3 of your practice's funding come from public insurance?	Yes - 1; No - 2; Unsure - 3
Reimbursement for Individual	Describe your reimbursement for individual therapy.	Self - 1; Private - 2; Public - 3; None - 4
Reimbursement for Group Skills	Describe your reimbursement for group skills training.	Self - 1; Private - 2; Public - 3; None - 4
Reimbursement for Between Session Coaching	Describe your reimbursement for between session coaching.	Self - 1; Private - 2; Public - 3; None - 4
Reimbursement for Clinical Team Meetings	Describe your reimbursement for clinical team meetings.	Self - 1; Private - 2; Public - 3; None - 4
Office Space	Does your DBT program have adequate office space to carry out all modes of DBT (individual therapy, group skills training, team meetings, and between session consultation)?	Yes - 2, Some - 1, No - 0

As previously discussed, the dependent variables represent each respondent's DBT implementation outcomes. This was operationally defined by the tally of scores on the PETQ, and organized into the variables outlined in Table 5.

Table 5: Operational Definition of the Dependent Variable

Variable	Measure	Possible Values	
PETQ	Outpatient: Milieu/ Day Treatment: Inpatient/ Residential:	PETQ items (2-49, 51,52)/50 PETQ items (2-49, 54-56)/51 PETQ items (2-49, 58-60)/51	0.00-1.00
<i>PETQ Subscales:</i>			
Program Elements Specific to DBT		PETQ, items (2-16)/ 15	0.00-1.00
Program Consultation Team		PETQ, items (17-27)/11	0.00-1.00
Client Treatment and Support		PETQ, items (28-36)/9	0.00-1.00
DBT Tracking of Treatment Outcomes		PETQ, items (37-45)/9	0.00-1.00
Documentation of Treatment		PETQ, items (46-49)/4	0.00-1.00

All data was analyzed on SPSS and checked by a statistician. Descriptive statistics and bivariate analyses- including t-tests, ANOVAs, and correlation procedures- were employed. Positive statistical associations between inner setting variables and desirable DBT implementation outcomes were cautiously interpreted

as practice setting facilitators to DBT implementation. Negative associations were cautiously interpreted as barriers.

Qualitative

Upon interview completion, each recorded interview was transcribed into a Word Document by the researcher. The qualitative portion of the interview was coded line-by-line by the researcher utilizing nVivo software. To help control the biases outlined in the reflexivity statement above, a colleague coded one of the 20 interviews, and the open codes were compared to the researcher's codes to check for consistency. Following the grounded theory guidelines outlined by Creswell (2007), the open codes were further analyzed through processes of axial coding (p. 64). In total, 2,399 open codes were organized into 10 DBT categories, 8 Structural Characteristics categories, 13 Networks and Communications categories, 19 Culture and Climate categories, 23 Readiness for Implementation categories, and 3 categories deemed peripheral to the inquiry.

Human Subjects

The study was reviewed and approved by the University of Pennsylvania Internal Review Board.

The primary risk associated with this study was a breach in participant confidentiality. The following steps were taken to protect participant confidentiality: (1) While some identifying information, such as name, contact

information, and address, was necessary to complete qualitative interviews, only the bare minimum was obtained. (2) All data, including tracking information, was saved in password-protected files. (3) Before data was collected, informed consent was obtained through electronic signature. (4) Digital recordings were immediately deleted once each interview was transcribed. (5) All personal information was omitted from qualitative transcripts.

Safety began with subject consent, which was obtained from the subject online prior to data collection. Safety protocol was outlined in the consent form. Because participants were mental health providers discussing the nature of their practice and settings, safety risks were minimal.

Results

The results from this study are organized into five sections: (1) DBT implementation outcomes, (2) structural characteristics and DBT implementation, (3) networks, communication, and DBT implementation, (4) culture, climate, and DBT implementation, and (5) readiness for implementation and DBT implementation. The five sections are then subdivided into (a) quantitative findings, (b) qualitative support for the quantitative findings, and (c) additional qualitative findings. The results can be summarized as follows:

- “DBT tracking of treatment outcomes” had a much lower average score than the other PETQ subscales. Qualitative data confirms that teams are struggling to track outcomes.

- Four scales were positively correlated with the PETQ scores: ORC Cohesion, ORC Communication, TCI-14, and the PETQ Supervision subscale. Each correlation had strong statistical significance, and all four correlations were bolstered by qualitative findings.
- Programs with adequate office space had higher average PETQ scores than those without. Stand-alone programs had higher average PETQ scores than those nested in organizations. Both differences had moderate statistical significance and some qualitative support.
- Team size was positively correlated with the PETQ, and the percentage of team members with a doctorate degree was negatively correlated. Both correlations had moderate statistical significance but little or no qualitative support.
- A number of additional hypotheses can be drawn from qualitative analysis. See the discussion section for a partial list.

DBT Implementation Outcomes

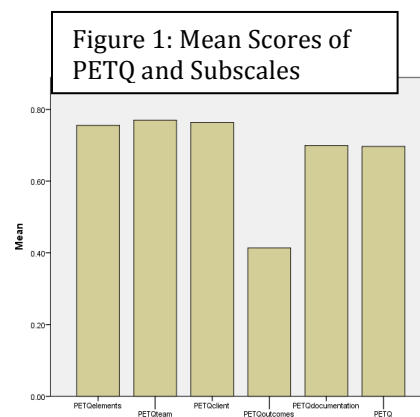
Quantitative findings. Percentages of respondents indicating their program’s utilization of each aspect of DBT are as follows: (1) individual therapy – 96.20%, (2) group skills training – 98.73%, (3) skills coaching/ telephone consultation – 87.34%, (4) therapist consultation team – 97.47%, (5) individual skills training – 60.76%, (6) DBT pharmacotherapy – 26.56%, (7) DBT case management – 31.65%, and (8) DBT support/ group process therapy – 32.91%.

Table 6: Descriptive Statistics – DBT Implementation Outcomes

Scale	items	n	α	M	SD
PETQ	50-51	79	0.87	0.70	0.16
Program Elements Specific to DBT	15	79	0.66	0.76	0.16
Program Consultation Team	11	79	0.76	0.77	0.20
Client Treatment and Support	9	79	0.66	0.76	0.21
DBT Tracking of Treatment Outcomes	9	79	0.82	0.41	0.30
Documentation of Treatment	4	79	0.62	0.70	0.30

Respondents had an average PETQ score of 0.70, meaning on average, they selected “yes” on 70% of its items. The PETQ had good internal reliability ($\alpha = 0.87$). However, its five subscales were less reliable, with three of the five alpha coefficients under the 0.70 acceptability threshold commonly employed by researchers. Due to reliability considerations, only the total PETQ was compared to practice setting variables.

The average scores of the PETQ and its subscales can be found in Figure 1. Four of the five subscales had average scores between 0.70 and 0.77. However, “DBT Tracking of Treatment Outcomes”(M = 0.41) was much lower. In addition to having the lowest average, it also had the highest reliability of the subscales ($\alpha = 0.82$).



Qualitative support for quantitative findings. Qualitative data bolster the quantitative findings suggesting that DBT programs are struggling to track outcomes. While participants described the employment of many DBT elements in detail, approximately half of the participants denied tracking outcomes in their setting at all. One stated, “It’s still probably the most challenging part in all of this.” Two participants even expressed shame over not tracking outcomes in their setting. Logistical concerns were the most commonly cited barrier, including time, costs of instruments, and client factors. Participants expressed not knowing how to track outcomes, what outcomes to track, or the meaning of tracking outcomes. After

referring to outcomes as “useless paperwork,” one participant stated, “I don’t know if there’s any utility to it.”

For an overview of all qualitative axial codes related to DBT implementation outcomes, see Figure 2.

Additional qualitative findings. Those participants able to track outcomes offered implementation strategies and demonstrated its impact. One solution involved simplifying the process:

DBT is actually a very simple program to run outcomes on because a client comes in your office every week and hands you a diary card full of data. ...It doesn’t matter what the studies looked at. The studies looked at what they wanted to look at because that’s what they wanted to know. What do you want to know? Like at the end of the day, when you’re tired and need a vacation and you’re just thinking, ‘Why don’t I treat anxiety disorders?’ What’s going to keep you hanging in there personally? Find a way to track that. Usually for me, it’s that suicidal people are getting less suicidal. I can pull that off the diary card.

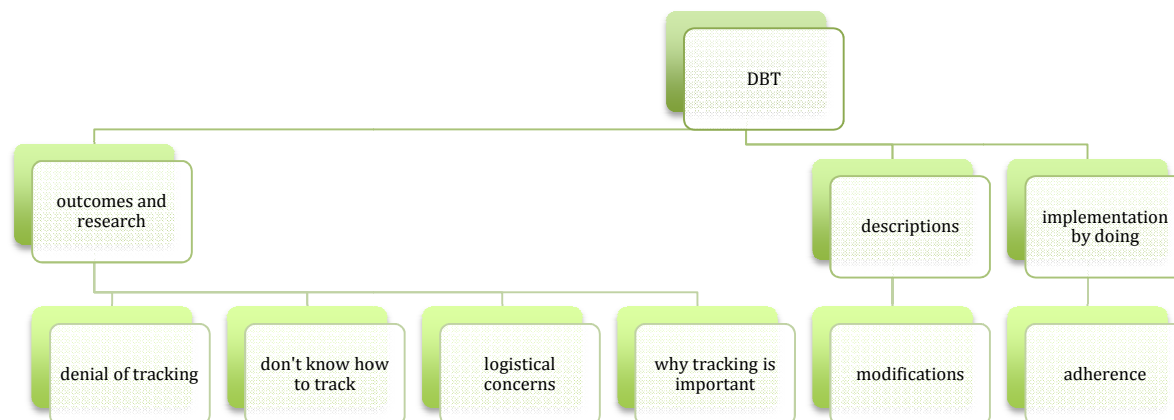
Some spoke of the utility of tracking outcomes. For example, several participants mentioned Cedar Koons and her encouragement to use data when advocating for increased funding and support from insurance companies, administrators, and others. To maintain the backing of local government officials, one participant stated:

The best way I’ve made that sales pitch thus far is just through keeping track of graduation rates, and I can clearly show that the three years prior to DBT versus the three years after DBT, our graduation rates are higher.

Others described the benefits of tracking outcomes for clients. For example:

It can be really great for clients to see a graph, like, 'Hey look. Over time your urges to self-harm have gone down.' It's really nice for them to actually see objectively that that's happening. I think it's really reinforcing for them and I think it can be a great way to build commitment to work on other things.

Figure 2: Qualitative Codes – DBT Implementation Outcomes



Two other themes emerged concerning DBT implementation. First, several participants discussed modifying the treatment. For example, both participants in college counseling centers spoke of the necessity to change DBT's required session numbers and time requirements to fit within their university's semester schedule. Another commonly cited modification was not using a skills group co-leader. However, those adapting the treatment largely expressed caution when doing so. Several individuals reported consulting with intensive trainers before making changes.

Another theme emerging from qualitative analysis was the recommendation to adhere to instructions from trainings and manuals as closely as possible. To some, this was an important implementation strategy, and many participants spoke of starting a DBT program simply by practicing and doing the treatment. One

claimed, “Because it’s manualized, people should be able to pick up the manual and do the treatment.” Another stated:

If you’re in full time practice, the only thing that’s going to make you make time to learn skills is if, ‘Oh my goodness, I’m teaching them this week so I better learn them.’ I think people should get started, like learn as they go.

The theme of implementing-by-doing will not be explored in depth here. However, before examining practice setting variables and their impact on implementation, the expressed notion that DBT implementation largely consists of simply doing the treatment is underscored.

Structural Characteristics

Quantitative findings.

Table 7: Descriptive Statistics – Structural Characteristics

Variable	Value	n	M	SD
Organizational Affiliation	Stand Alone	29	PETQ = 0.74	0.12
	Nested	50	PETQ = 0.67	0.18
Age of Team	0-?	78	7.35 years	6.51
Time Since Training	0-?	78	9.53 years	5.71
Size of Team	0-?	79	7.94 people	4.48
Size of Program	0-?	79	19.61 people	46.64
Level of Care	Outpatient	71	PETQ = 0.71	0.14
	Inpatient/ Residential	6	PETQ = 0.61	0.28
	Milieu/ Day Treatment	2	PETQ = 0.57	0.22

Respondents representing stand-alone DBT programs had larger PETQ scores than those representing teams nested within organizations, and this difference reached moderate significance $t(75) = 2.13, p < .05$. Neither the age of the team $r = 0.10, p = n.s.$, nor the time since team training $r = 0.15, p = n.s.$, were significantly correlated with PETQ scores. Program size was also not significantly

correlated with PETQ scores $r = -0.07, p = n.s.$. The size of the team was correlated with PETQ scores $r = 0.28, p < 0.05$ with moderate significance. The main effect of a practice setting's level of care on PETQ scores was not significant $F(2, 78), p = n.s.$ All descriptive statistics for variables representing structural characteristics are outlined in Table 7. A summary of their relationships with the PETQ scores can be viewed in Table 8.

Table 8: Summary of Findings – Structural Characteristics

Variable	Significance	Relationship to PETQ
Organizational affiliation	$p < 0.05$	Stand-alone DBT programs have higher PETQ scores than those nested within an organization.
Age of team	$n.s.$	
Time since trained	$n.s.$	
Size of team	$p < 0.05$	Team size is positively correlated with the PETQ
Size of program	$n.s.$	
Level of care	$n.s.$	

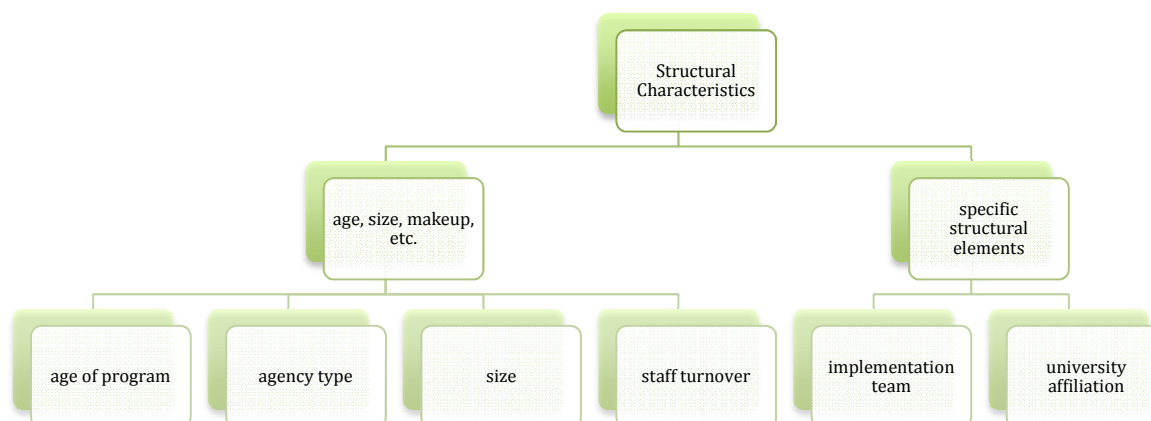
Qualitative support for quantitative findings. Qualitative findings concerning the measured structural characteristics were largely unclear and inconsistent. Participants had experiences in a wide range of settings, yet few statements were made regarding the impact of CFIR-defined structural characteristics on DBT utilization. One participant explicitly stated, “I don’t know that the structure matters.”

Some isolated comments were arguably connected to the quantitative findings. While no participants spoke of the impact of nested versus stand alone structures, one participant stated, “Large systems have more moving parts and cost more to move and definitely move more slowly.” Another spoke at length about bureaucracy impeding implementation. Two individuals, both with team-sizes of

three members, conveyed a desire to have a larger team. Several others spoke about the success of DBT drawing people to their team, suggesting that a large team size results from successful implementation instead of causing it. However, such statements were not reflective of larger qualitative themes, and participants differed in their assessments of the impact most structural characteristics have on DBT implementation. For a complete list of axial codes related to structural characteristics, see Figure 3.

Additional qualitative findings.

Figure 3: Qualitative Codes – Structural Characteristics



Despite the lack of clarity between qualitative and quantitative findings in this CFIR domain, two themes emerged regarding two specific structural characteristics in practice settings. First, several participants spoke about the necessity of an implementation team, which some referred to as a resource team or work group. Such a structure was described as being separate from the clinical team. In organizations, this structure was not only described as involving DBT

experts, but also those with the power to change policies and allocate money. One participant described a non-DBT-oriented workgroup member by stating:

She's a good advocate, and if you want something done and you can get her interested in it, she'll make sure that it gets done.

Several participants explained that members of the consultation and implementation teams may overlap, but the key feature of such a structure is that clinical and non-clinical activities are separated. Some participants from stand-alone DBT programs reported using the same members for their consultation and implementation teams, but holding a separate meeting devoted to logistical concerns unrelated to clinical work. One participant described a situation without such delineation:

One of the other challenges that's unique to our structure is that we're simultaneously meeting to be a clinical team for one another, but we're also meeting to do the business of developing the center. So we might have an hour that we're talking with our Web designer, or having consistency in our intake forms and things like that. So this time period of creating the center has taken away from some of the clinical consultation time.

Second, several participants conveyed the importance of having an organizational affiliation with a university. Some described settings directly nested in a university or teaching hospital. Others mentioned providing field instruction for students or containing therapists who also held college faculty positions. A few participants claimed that formal university ties bolstered the ability to stay current. Students were often cited as mutually beneficial, cost-effective solutions for

implementing DBT elements, such as co-leading skills groups and performing program evaluation.

Networks and Communication

Quantitative findings.

Table 9: Descriptive Statistics: Networks and Communication

Variable	Measurement	Items	n	α	M	SD
Consistency	Missed team	-	37	-	PETQ: 0.75	0.14
	Did not miss	-	42	-	PETQ: 0.66	0.17
Cohesion	ORC	6	77	0.88	25.75	4.13
Communication	ORC	5	73	0.86	18.66	4.49

The difference in PETQ scores between respondents missing team meetings in the past two months and those who did not miss team meetings in the past two months was not statistically significant $t(77) = -2.42, p = n.s.$ Both the ORC Cohesion ($\alpha = 0.88$) and ORC Communication ($\alpha = 0.86$) subscales had good internal reliability. Respondent scores on the ORC Cohesion and PETQ scales were positively correlated $r = 0.43, p < 0.01$. The ORC Communication scores were also positively correlated with the PETQ $r = 0.49, p < 0.01$. The statistical significance of both correlations was strong. The descriptive statistics of variables representing networks and communications can be found in Table 9, and their relationships with the PETQ are summarized in Table 10.

Table 10: Summary of Findings: Networks and Communication

Variable	Significance	Relationship to PETQ
Team consistency	<i>n.s.</i>	
Team cohesion	$p < 0.01$	ORC Cohesion is positively correlated with the PETQ.
Team communication	$p < 0.01$	ORC Communication is positively correlated with the PETQ

Qualitative support for quantitative findings. The importance of team level interpersonal processes such as cohesion, commitment, and communication were clear themes emerging from qualitative analysis. Regarding team level cohesion, many expressed (a) liking their team, (b) liking their team members, and (c) the necessity of being vulnerable with one another. One participant stated:

The thing that we love about it, all of us, is the encouragement to bring our own fallibility and our own struggles and not to judge each other but to work as a support team.

Another theme was the importance of open communication. For example:

So when I came on, one of the team members on my team frequently called in sick... And nobody brought up the amount of time that she was taking off and the last minute cancellations and how that was impacting... not only her clients, but also the team having to jump in to cover for her. And that went unsaid – I would say, probably for about a year... And recently we had somebody start who very unexpectedly took a pretty significant amount of time off, came back for a week, and then took another week off. Which was similar behavior to this previous clinician. And in the team for the past several weeks, we've been really actively problem solving what happened with her – how this got to this point, what got in the way of our communicating as a team.

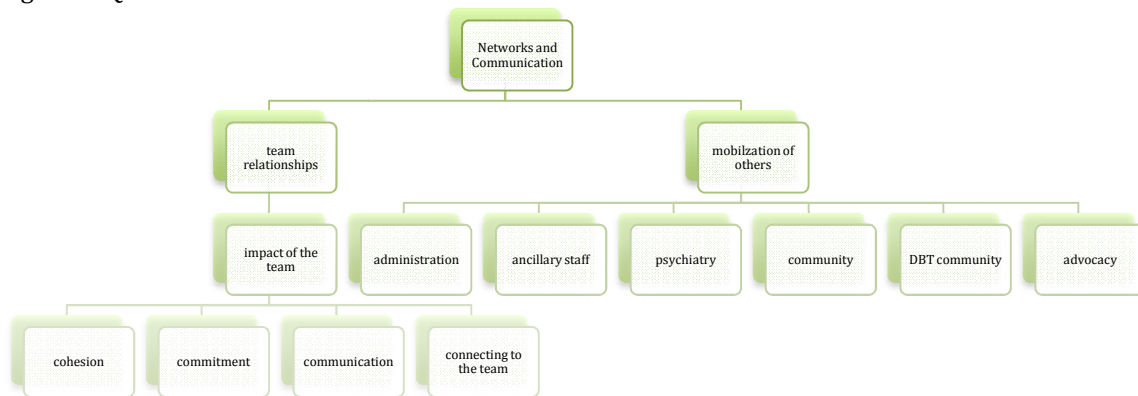
Participants commonly linked these team level processes to increased DBT utilization and implementation. For example:

There's often this parallel process that's happening in individual sessions because really the team is functioning in much the same way as a microcosm of what we're doing in sessions, because we're utilizing all the same methods of communication styles, techniques, etc. And so I think the better we get at doing that with each other in team, what I'm finding is that's translating to therapy sessions, to teaching group skills.

For all axial codes concerning networks and communication, see Figure 4.

Additional qualitative findings.

Figure 4: Qualitative Codes: Networks and Communication



Two other themes emerged from qualitative analysis: (a) how to connect to a team, and (b) the importance of networks and communication with entities outside of the team. Several participants grappled with team formation. One participant spoke at length about feeling isolated and alone in her practice, struggling to have a team that met regularly due to logistical barriers and uncommitted team members. Another described a fear of moving in her personal life due to the uncertainty of connecting to a team in a new location. A third participant moved to a new state and had struggled to find DBT colleagues in her new location. Describing a possible solution to such situations, she continued with her former team online:

I had no professional contacts here and wasn't finding anybody to be doing DBT with. So I have maintained consultation team via Skype with my colleagues in [my previous practice] for the past year.

For those without a former team to connect to, one participant illustrated the possibility of creating a team with individuals from other settings:

I have people who are in an organization in which nobody else wants to do DBT, so they come up to me at the end of training, and I do something that I jokingly refer to as DBT_Harmony.com. And I kind of hook people up to teams and so somebody at an agency where they're getting no support to do DBT ... they can actually go and join another team and practice DBT through their individual sessions.

In addition to team-level processes, participants also spoke about the necessity of cohesion and communication with administration, ancillary staff, psychiatrists, the surrounding community, and the larger DBT community. Because those in private practice often lack administration or ancillary staff, their need to connect to the surrounding community was conveyed as particularly important. Connection beyond the team was portrayed as having tangible impact on DBT processes, by bolstering financial support, referral sources, skill generalization for clients, and problem-solving abilities for DBT programs. For example, some participants spoke of training front-line staff and parole officers to provide additional skills coaching. One program activated a local politician and a television news station to increase community awareness of their program.

Other participants discussed the threat of weak networks and communication to DBT implementation. In demonstrating how a non-cohesive relationship with a psychiatrist interfered with DBT processes, a participant relayed a story involving a particularly violent and resistant client:

We gave her a therapy vacation and she decided she didn't want to come back, but she wanted to stay with the med prescriber who she liked. And our director said, 'If you're not going to stay here for DBT, which we see as really the only service that we feel we can offer you at this

time, you cannot have the prescriber.’ And the prescriber she had was a former director of the program. And he just pulled rank on the new director and said, ‘I’m keeping her.’

Culture and Climate

Quantitative findings.

Table 11: Descriptive Statistics and Findings: Culture and Climate

Scale	Items	n	α	M	SD
TCI-14: total	14	74	0.94	59.85	8.51
TCI-14: vision	4	75	0.89	17.79	2.60
TCI-14: safety	4	75	0.89	17.55	2.66
TCI-14: task	3	77	0.83	12.25	2.27
TCI-14: innovation	3	77	0.85	12.13	2.34

The TCI-14 and all of its subscales were positively correlated with PETQ scores. The total TCI-14 had excellent internal reliability and was strongly correlated, $r(72) = 0.58, p < 0.01$. The vision, safety, task, and innovation subscales had good internal reliability and were also strongly correlated with the PETQ: $r(73) = 0.72, p < 0.01$; $r(73) = 0.46, p < 0.01$; $r(75) = 0.44, p < 0.01$; and $r(75) = 0.34, p < 0.01$. Descriptive statistics for the TCI-14 are outlined in Table 11.

Qualitative support for the quantitative findings. Qualitative findings were congruent with the correlations between the TCI-14 and the PETQ. Many participants spoke of the importance of sharing goals, vision, and a collective energy for having a DBT program. For example:

We have the same goals and philosophy about it. We’re all willing to compromise in order to make DBT happen.

Another participant provided an example of a clear, DBT-related goal:

The goal for our larger implementation and for really motivated people on my own team is to achieve national certification- to do the treatment at the very highest standard.

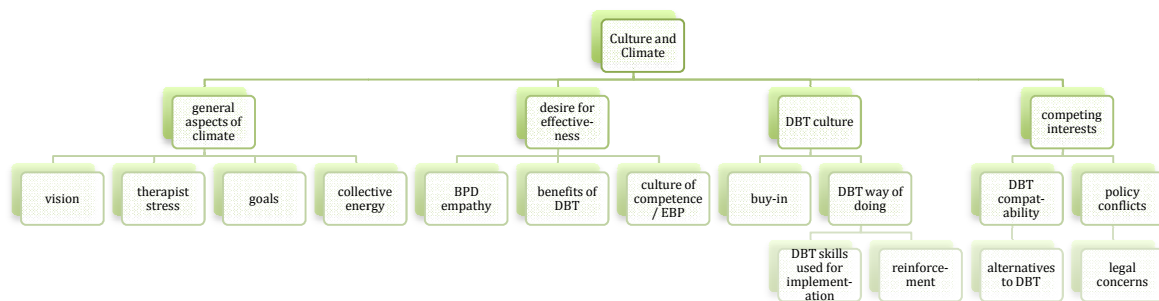
Participants also linked such vision and goals with implementation:

And they had a date, right? So they started groups I think in June, July but they had this move date when it was like, 'this is the day that we will be full out DBT.' And it totally happened.

For a complete list of qualitative codes related to climate and culture, see Figure 5.

Additional qualitative findings.

Figure 5: Qualitative Codes: Culture and Climate



In addition to sharing goals, many participants spoke of a strong desire to be effective within their settings. To many participants, this desire to be effective involved empathy for individuals displaying borderline personality disorder symptoms, suicidality, and other difficult-to-treat concerns. This empathy was portrayed as translating to a desire for the effective solutions offered in DBT. In discussing a previous setting that did not offer DBT, one participant stated:

Kind of the attitude for the clients that had borderline personality disorder, is you just want to get them through a crisis and then you send them off and ignore them. There wasn't any treatment for them and these people are in a lot of pain, and people didn't like working with them. And that's how I first initially started with DBT, is I went to a workshop in 1995 and

another in 98. And I like the fact that there is something out there that could help this set of people.

In addition to a desire to be effective with difficult-to-treat individuals, many participants sought to increase their own personal and professional abilities through DBT. For example:

On a personal level, and I think other people have shared this with me too, is that I get healthier and healthier the more that I practice DBT and stay true to that. And so I think in terms of having a way to stay healthy within an incredibly stressful workplace, it works well.

For some settings, the desire for effectiveness through DBT coincided with the worldwide push for evidence-based practice.

The previous CEO that was here was very connected with wanting to do empirically based treatments. So I think that has a lot to do with why there was significant administrative support for getting our team intensively trained early on.

Another qualitative theme involved the development of a DBT culture within practice settings. Many participants spoke of the necessity for alignment and buy-in with DBT principles at every level – team members, administrators, the community, and others. Highlighting its importance to implementation, one participant stated, “The immediate problem has always been buy-in.” Many participants expressed the use of commitment strategies to increase alignment and buy-in. For example, one participant described their program’s process before new members could join their consultation team:

Having new staff members come in, we make sure that people have done background reading in the treatment, that they understand sort of the framework, and that they buy in to the model before they join our team.

Participants commonly described implementation as the formation of a DBT way of being and understanding, and the treatment was portrayed as much more than a set of skills to help clients. Several participants referred to a DBT language for interacting with each other within programs. One participant working in a residential treatment center stated, “We live in a DBT culture.” Another referred to viewing the world through a DBT lens. As evidence of this DBT culture, most participants described how DBT ideals permeated their personal lives:

It isn't just what we teach our patients, you know? All of our spouses know radical acceptance. It's just a way of breathing. And I don't know that I'd trust a clinician who does DBT who doesn't think that way.

Beyond DBT's impact on personal and therapeutic processes within programs, a DBT lens was used to inform many non-clinical processes within practice settings. Even implementation itself was viewed as being directed by DBT. One participant advocated use of DBT strategies for resistant clients with resistant administrators:

I find that implementation of DBT is doing the therapy on those people. It's the same thing you do with a client when you're trying to get your client to give up suicidal behavior. The client's just not going to give up suicidal behavior. You've got to find out what their goals are and then link their goals with what you do. You do that same thing with policy makers. The same thing with funders.

Reinforcement, a fundamental principle of DBT, was also employed to impact DBT implementation. One participant described an agency where the phrase “DBT nerd” was used as a term of endearment:

We try to be very reinforcing verbally when we see good, adherent DBT done, and let them know, 'You're great. You're awesome. 12,000 gold stars.'

According to another participant, a director used reinforcement to help a practice navigate a particularly challenging time period:

She also set up a month-long token economy where everybody was given like the gambling chips that you get in Vegas. ...If then somebody had done something that you felt was team enhancing or you just wanted to recognize that person, you'd give them a chip. And then at the end of the month, during the big team meeting, she had prizes for how many chips you had.

While adopting a DBT-congruent culture and climate represented major themes of the qualitative findings, competing interests emerged as a barrier to implementation. Just as participants claimed to be attracted to DBT for its intimacy with clients, mindfulness, or irreverence, many also described coworkers who found the treatment less appealing. Particularly noted were individuals who had practiced something other than DBT for a long time prior to implementation. Incompatibility was seen as an obstacle to buy-in. For example:

If the clinicians don't believe in it, if they think it's not something that's useful, or it's too much work, or it's not something that's psychodynamic... It's not relevant for them in their practice, and it translates then to the client.

In addition to individuals within settings who found DBT incompatible, policies were also commonly referred to as conflicting with DBT. Cited examples include DBT's 24-hour rule, if and when to call the police on clients, and when to terminate treatment. One participant described the impact of an agency policy that did not allow telephone coaching by DBT therapists:

What that means is we provide phone coaching during office hours and then our clients have to call sort of a crisis line after hours and it causes a lot of problems. And I think from my

perspective, what ends up happening is often times people get hospitalized, when really if I was able to do coaching I might have been able to prevent that.

Readiness for Implementation

Quantitative findings.

Table 12: Descriptive Statistics: Readiness for Implementation

Variable	Value	Items	n	α	M	SD
Supervision (PETQ subscale)	0-1.00	2	79	0.81	0.69	0.43
% of team has Bachelors degree	0-1.00	-	75	-	0.11	0.19
% of team has Masters degree	0-1.00	-	75	-	0.68	0.33
% of team has Doctoral degree	0-1.00	-	75	-	0.09	0.14
> 1/3 of funding by self-pay	Yes	-	19	-	PETQ: 0.72	0.11
	No/Unsure	-	60	-	PETQ: 0.69	0.17
> 1/3 of funding by private insurance	Yes	-	47	-	PETQ: 0.68	0.18
	No/Unsure	-	32	-	PETQ: 0.72	0.12
>1/3 publicly funded	Yes	-	23	-	PETQ: 0.72	0.16
	No/Unsure	-	56	-	PETQ: 0.69	0.16
Reimbursement for individual therapy	Self	-	14	-	PETQ: 0.70	0.09
	Private	-	17	-	PETQ: 0.73	0.17
	Public	-	43	-	PETQ: 0.69	0.18
	None	-	4	-	PETQ: 0.63	0.16
Reimbursement for group skills training	Self	-	17	-	PETQ: 0.71	0.10
	Private	-	14	-	PETQ: 0.72	0.18
	Public	-	42	-	PETQ: 0.70	0.17
	None	-	5	-	PETQ: 0.58	0.16
Reimbursement for between session coaching	Self	-	0	-	-	-
	Private	-	1	-	PETQ: 0.68	-
	Public	-	27	-	PETQ: 0.68	0.19
	None	-	49	-	PETQ: 0.71	0.14
Reimbursement for consultation team	Self	-	0	-	-	-
	Private	-	0	-	-	-
	Public	-	22	-	PETQ: 0.67	0.21
	None	-	55	-	PETQ: 0.71	0.14
Adequacy of office space?	Yes	-	60	-	PETQ: 0.72	0.15
	Not Yes	-	18	-	PETQ: 0.62	0.18

The PETQ supervision subscale was positively correlated with the PETQ scores $r = 0.61$, $p < 0.001$, and the relationship's statistical significance is considered

very strong. (Note that the PETQ supervision subscale was omitted from the calculation of the total PETQ score.) Percentage of team members with less than a Masters degree was not significantly correlated with PETQ scores $r = -0.08, p = n.s.$ Percentage of team members with a Masters degree but not a Doctoral degree was also not significantly correlated with PETQ scores $r = -0.03, p = n.s.$ However, the percentage of team members with a Doctoral degree was negatively correlated with PETQ scores $r = -0.53, p < 0.05$, and its statistical significance is considered moderate. No significance was found between the PETQ scores of those that do and do not report more than 1/3 of their funding coming through (a) self-pay $t(48) = 0.83, p = n.s.$, (b) private insurance $t(77) = -1.11, p = n.s.$, and (c) public insurance $t(40) = 0.70, p = n.s.$ Similarly, the main effect of reimbursement on PETQ scores was not significant for (a) individual therapy $F(3, 74) = 0.49, p = n.s.$ or (b) group skills training $F(3, 74) = 1.06, p = n.s.$ The differences in PETQ scores of those who received reimbursement were not significantly different from those who did not receive reimbursement for (a) between session coaching $t(29) = 0.89, p = n.s.$ or (b) consultation team meetings $t(42) = -0.58, p = n.s.$ Those who report having adequate office space had higher PETQ scores than those who did not report having adequate office space. This difference was significant $t(76) = 2.32, p < .05.$ Descriptive statistics for variables representing readiness for implementation can be viewed in Table 12. A summary of their relationships to PETQ scores can be viewed in Table 13.

Table 13: Summary of Findings: Readiness for Implementation

Variable	Significance	Relationship to PETQ
Supervision	$p < 0.001$	PETQ Supervision positively correlated with PETQ
% Bachelors	<i>n.s.</i>	
% Masters	<i>n.s.</i>	
% Doctorate	$p < 0.05$	% of doctoral degrees negatively correlated
Funding of program	<i>n.s.</i>	
Funding of modes	<i>n.s.</i>	
Office space	$p < 0.05$	Those with adequate office space have higher PETQ scores than those without.

Qualitative support for quantitative findings. Qualitative support for the importance of supervision was clear and strong. It was less clear for the importance of office space, and it was non-existent for the impact of team members with doctoral degrees.

Many participants expressed the importance of supervision in DBT provision, although some conceptualized the process as occurring on their consultation teams. In describing the significance of supervision, one participant stated:

DBT is a very complex treatment. And I think going to an intensive training program is not enough for people to really learn how to do the treatment. People need supervision, and I guess you could argue that for most therapies.

Many specifically mentioned recording and reviewing sessions as an important tool for supervision and implementation.

Some participants claimed that office space is an important resource for implementing DBT. Several mentioned the importance of comfortable space for groups, individual therapy, and consultation team meetings. However, most statements made about office space alluded to its ability to foster other important aspects in practice settings. For example, two participants in private practice

indicated a desire to have their team in the same location to enable more communication with team members. One participant described a program's physical space, while alluding to its impact on the setting's culture:

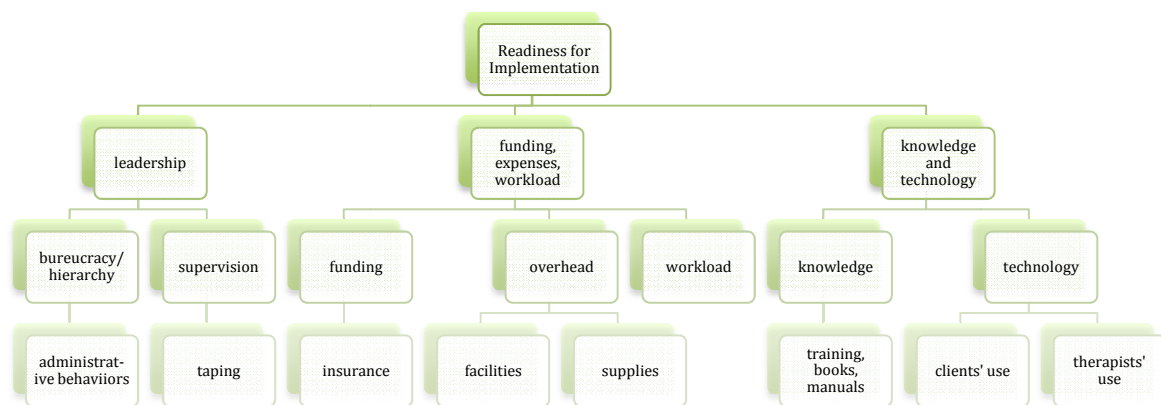
It is designed to not look institutional at all... It's designed to look like kind of a hunting lodge. They have a big native population that they treat. So you know the lights are canoes. They basically said, 'we're not buying anything from hospital procurement people. We're buying everything from furniture places.' And it has big group rooms, nice offices for individual therapy. It has a spiritual kind of meditation center. It has an occupational therapy room that is done full out DBT. So when this woman ordered all of her supplies, what she was thinking is, 'how can I make every group a DBT group to support skills training?' They had these gorgeous posters with skills written in them made for the walls. Every time they were going to make a decision like colors, you know they would call me and say, 'Now are there colors that are better for DBT people?' So literally every decision they made was, 'is this DBT?' And as they did this of course people got more and more and more excited.

Despite several participants' descriptions of the tangible impact of office space, two participants spoke of their ability to make due with less-than-desirable physical space. One individual stated that her program offers skills training groups in a tent-like structure outside their building. Another individual claimed to supply ice in a particularly hot skills training room for reinforcement. Therefore, despite many statements made about office space, its direct, tangible impact on DBT implementation was less clear.

For a complete list of axial codes involving readiness for implementation, see Figure 6.

Additional qualitative findings.

Figure 6: Qualitative Codes: Readiness for Implementation



Qualitative analyses highlighted other aspects of CFIR readiness for implementation sub-constructs, including (1) leadership, (2) funding, expenses, and workload, and (3) knowledge and technology.

Many participants described different leadership structures in their programs. Some rotated leadership on their team, while others clearly identified one person. Patterns regarding the impact on implementation of either model could not be detected. Others spoke of leadership from outside of their team, such as administration. While identification of leaders varied between participants, one emerging theme involved bottom-up leadership versus top-down leadership. Several participants demonstrated the potentially problematic nature of top-down authority when describing administrators forcing unwilling therapists to practice DBT. For example:

...His kind of mandating everyone to be part of it, because he was keen on implementing it here, definitely was a hindrance in some ways. Because people had varying levels of motivation and commitment to doing DBT.

While also exploring top-down leadership, another participant, a director, wrestled with the appropriateness of exercising authority to foster therapists to have a personal mindfulness practice:

And then I guess I'm at a loss. I don't know that I have the authority, or maybe I do. I haven't been willing to go to that extreme yet, to tell them they have to practice mindfulness... I suppose I could make it a condition of employment, I just haven't been willing to at this point, I guess, to go that far.

While some participants spoke of administrative power and its limitations, several participants described DBT-enhancing leadership as a bottom-up process, with hierarchy and status representing a significant barrier:

I think that the big barrier I see is where there's a bureaucratic organization where hierarchy is very important, and status. I've particularly found it difficult to implement in environments where people kind of rose up out of the line level staff – like in a juvenile detention system or prison system, where somebody who was once a guard can become the warden, and they've fought hard for that status. And DBT is not a kind of status-based model. Treatment has to be driven by the team and by the individual therapists.

Another stated:

I don't think the administration needs to do any leading. I do think they need to just stand back and get out of the way though.

In addition to endorsing bottom-up leadership, participants also spoke at length about funding, expenses, and workload. One theme that emerged was the tension between financial remuneration and inclusion of clients. One participant conveyed her rationale to stop accepting insurance through the following story:

I had another client that I worked with who started out with DBT, but then as time progresses really was more of... an obsessive-compulsive personality disorder. And I saw her for a couple of years and then didn't see her for a couple of years because she moved away. ...But [the insurance company] had just gone into my bank account and taken out \$900. Even though they had approved the sessions and I had been writing reports for them and they kept approving sessions, they suddenly decided, 'Oh no. We're not going to pay that money.'

Others chose to accept insurances, despite such conflicts. One participant stated:

Medicare of course is not the most remunerative source. But I will always believe that we have to take Medicare reimbursement because some of the clients have disabilities from quite a while ago and are on Medicare. And of course our DID clients are on Medicare.

Most participants explicitly expressed a desire for both (a) decent wages and (b) treating as many people in need as possible. To resolve challenges resulting from these potentially conflicting desires, one participant described seeking higher rates from an insurance company:

An insurance company slashed what they were reimbursing for group from 40 dollars to 25 dollars. So we were like, this is going to be one of these other group people that we're not going to be able to have in group. And now we really can't have any Medicare people because you can't have two like that. So we gathered our cost analysis data and we gathered all of our other data and we called the insurance company like headquarters that luckily was somewhere close by. And we said we want to do an in-service day... We brought lunch in and we fed them lunch. We chit-chatted. And then we did a ten-minute presentation on our data. And the key with these people is to not take too much of their time. And we left pieces of paper with information on it with each of them and for people who couldn't be there. We got ten of our fifteen dollars back... I basically do what drug companies do.

Multiple participants cited acceptance of rates as an important factor:

DBT is about acceptance and change... We don't say, 'we should be getting more and this is not working, and I'm not wasting my time on this.' And that kind of attitude doesn't get you anywhere. So we make sure we have a great biller who knows everything inside out, and is helpful to us and any kind of glitches that we get. So we know we are getting the maximum funding, and then we are happy with whatever we get.

Perhaps related to the lack of significant quantitative findings regarding the impact of funding on DBT implementation, some participants explicitly felt that reimbursement did not impact the quality of their clinical work. For example, one individual stated:

Once I'm working with somebody, I actually tend to forget their insurance. I tend not to think about that once it gets going. I know there's times where I'm aware that I have a lot of lower paying insurances, and so I'll request clients with some other insurances... that pay closer to our full fee.

While participants acknowledged the impact of funding on decisions such as which insurance companies to accept, caseload size, and the long-term sustainability of programs, many explicitly conveyed similar sentiments that funding does not impact the quality of DBT offered. Complicating matters, however, money was often described as a factor when considering facilities, training, workload, books, reinforcement for clinicians, tracking outcomes, and advocating for a practice. These factors were then described as important to DBT implementation, so that the impact of funding on implementation remains ultimately uncertain.

The importance of access to knowledge was much more clearly articulated. Many participants cited books, manuals, and intensive training as necessary tools for every DBT clinician. Additional conferences, trainings, and online resources

were conveyed as vital supplemental sources of ongoing knowledge, as were organizations including Behavioral Tech, The Treatment Implementation Collaborative (TIC), Alan Fruzzetti's training group, The International Society for the Improvement and Teaching of Dialectical Behavior Therapy (ISITDBT), and The Association of Behavioral and Cognitive Therapies (ABCT). One participant stated:

I think with attending each training, for me, it really re-energizes me. It energizes me again to really go back and make sure that I am on track with staying as adherent as possible. It provides me with more motivation and it provides me with more knowledge, so that I can then integrate that into my practice as well as disseminate it through in-service trainings to my fellow clinicians and my interns to then be able to even better help the clients giving them new and more knowledge.

Additionally, several participants spoke of the importance of keeping abreast of the latest research studies and discoveries, particularly through the DBT listserv.

Several participants demonstrated how settings underutilize technology as a resource for implementation. Some described DBT clients as high Internet users. In stating how clients found her practice, one participant heard "amazing stories about how folks have sought it out." Another spoke of clients searching for DBT skills on Google, helping them learn faster. Despite this high usage of the Internet by clients, one participant noted that DBT clinicians are lacking in this area:

I think that is the great current failing of clinicians, that for some reason, those of us who are in the social sciences are kind of the last to jump on board on using technology... We're slow to move on things like social media. You know there's all this talk now about, 'can you do telephone consultation on text messaging with a client?' You know well I've got 19-year old clients. They aren't going to communicate with you except via text, and so we've all got to

learn how to text. And we need to learn how to use Facebook and all media to reach out to our people. To bring ourselves together and to bring our clients in.

Discussion

In synthesizing the numerous findings, four key themes are noted and discussed: (1) supervision, team cohesion, team communication, and team climate are connected with DBT implementation, (2) other practice setting variables also appear connected with DBT implementation, (3) many DBT programs are struggling to track outcomes, and (4) additional hypotheses regarding practice settings and DBT implementation have been generated. Several important limitations exist, and they will also be discussed. A list of major findings can be found in Table 14.

Table 14: List of Major Findings

Facilitators	Barriers	Strength of Evidence
Supervision	-	Strong correlation. Clear qualitative support.
Team climate	-	Strong correlation. Clear qualitative support.
Team communication	-	Strong correlation. Clear qualitative support.
Team cohesion	-	Strong correlation. Clear qualitative support.
Adequate office space	-	Moderate correlation. Some qualitative support.
Stand-alone program	Nested in an organization	Moderate correlation. Some qualitative support.
Large team	-	Moderate correlation. Conflicting qualitative support.
-	% of team with a doctorate	Moderate correlation. Little or no qualitative support.

Finding 1 – core findings. The most important cluster of findings of this study is that supervision, team communication, team cohesion, and team climate were all strongly and positively correlated with DBT implementation. Each variable had a strong statistical relationship with DBT implementation, while no other

finding had such solid statistical significance. Furthermore, each of these four correlations was clearly bolstered by qualitative analyses, while other quantitative findings were not as clearly and directly corroborated by qualitative analyses.

Therefore, close inspection of patterns within these findings is warranted. All four represent cognitive, behavioral, emotional, and interpersonal processes derived from people within practice settings, as opposed to inanimate resources such as funding or office space. With so many qualitative statements supporting the importance of team-level authority for DBT programs, the group of findings may even be considered aspects of leadership, although such an interpretation is arguable. At the very least, the current research can cautiously conclude that these four variables are important facilitators of DBT implementation, while the importance of other, more tangible resources remains less certain.

Moreover, the conclusions correspond with other findings by implementation scientists. Several studies released while data for the present study was collected also demonstrate the importance of collective human behavior within practice settings. Beidas, Edmunds, Marcus, and Kendall (2012) found that supervision and consultation predicted therapist behavior after training. Torrey et al. (2012) conclude that effective and engaged leadership is a vital facilitator to EBT implementation. Cuvine, Richter, Bastos, and Ronzani (2013) demonstrated organizational climate's impact on implementation outcomes. Each study supports the present set of findings confirming the importance of interpersonal behavioral and psychological processes within practice settings.

The nexus of quantitative findings, qualitative findings, and existent research in the field support a reasonable conclusion that the quantity of implemented DBT elements increases with improvements in human and interpersonal processes within settings, including supervision, team cohesion, team communication, and team climate. Such a discovery has tremendous implications for those believing that DBT is too resource heavy to be implemented across settings by identifying some of those resources more precisely. In the current global economic context, connecting successful implementation to aspects of non-monetary, interpersonal behavior within practice settings offers hope.

Given the importance of these findings and the limitations explored below, further research is recommended. To more firmly establish causality, implementation strategies involving these four variables should be developed, administered, and tested in RCTs. Additionally, understanding how these four variables relate to one another is recommended for future inquiry. In a recent study of a statewide implementation project released after the current data collection began, Aarons and Sommerfeld (2013) explored the relationship between implementation, leadership, climate, leader-member exchanges, and therapist attitudes, offering alternative hypotheses worth investigating within the current set of data. Such an inquiry can be accomplished in the future by utilizing alternate statistical analyses to explore the relationships between these four findings. Specifically, some of these variables may be indirectly related to DBT implementation, acting as moderators or mediators to other key factors.

Finding 2 – additional findings. Other aspects of practice settings also appear connected to DBT implementation, although identification of specific aspects remains uncertain. Outside of the variables identified in the previous section, four other statistical associations were found in addition to the findings discussed in the previous section. However, (a) the statistical significance was not strong for these relationships, (b) none were as clearly bolstered by qualitative findings, and (c) a connection among the four findings could not be determined.

First, stand-alone DBT programs were found to have better DBT implementation than those nested within larger organizations. Second, practices with adequate office space implemented more DBT elements than those without. Both findings have small amounts of qualitative support and warrant future exploration, but not enough to solidify confidence in their individual findings. Therefore, both relationships should be interpreted with increased caution but considered possible barriers and facilitators to implementation nonetheless.

Third, as the size of consultation teams increased, so did DBT implementation. However, supporting qualitative data were less clear. Some participants' statements even suggest that well implemented programs draw people to their teams, as opposed to larger teams facilitating superior implementation. In other words, causality is unclear. Team size may not drive successful implementation but result from it. Fourth, teams containing a smaller percentage of individuals with doctoral degrees also implemented better than teams with a larger percentage of individuals with doctoral degrees. No qualitative statements supported this finding. Therefore, little confidence can be applied in interpreting

either variable – team size or percentage of doctorates on a team – as a barrier or facilitator to implementation.

Even though each of these four individual findings cannot inspire confidence on their own, enough associations were found to broadly suggest that other aspects of practice settings also appear to impact DBT implementation. Such a conclusion is bolstered by the qualitative data that point to many other possible barriers and facilitators to DBT implementation. It also corresponds to other findings from implementation scientists. For example, Torrey et al. (2012) found that all settings contain barriers, while active and engaged leadership is a key factor in resolving them.

Therefore, more practice setting variables likely impact DBT implementation, and further study of those factors should continue. Specifically, the four variables with moderate statistical significance- especially nesting and the adequacy of office space- should be considered in relation to other practice setting variables. For example, office space could act as a mediator to communication, as those without office space may lack the physical proximity or structure to engage.

Additionally, other non-significant statistical findings between implementation and practice settings cannot be confidently ruled out. For example, with a small sample size of just two individuals representing milieu or day treatment programs, the impact of such a structure on implementation is ultimately unknown. Also, Behavioral Tech, LLC regularly screens teams for their ability to follow through on implementation before training. This may impact the results,

especially the readiness for implementation variables. The importance of funding especially remains undetermined due to measurement difficulties.

Finding 3 – tracking outcomes. While measurement of specific DBT implementation outcomes (i.e. the PETQ subscales) must be considered imprecise at this time, the egregiously low average of the PETQ subscale measuring tracking of treatment outcomes warrants a reasonable interpretation that DBT teams are struggling in this area. Qualitative data strongly support this conclusion. However, a precise definition of desirable tracking of treatment outcomes in DBT remains unclear. All of the qualitative participants indicated utilizing a diary card in their practice settings, while most claimed not to track outcomes. Most participants did not think that a diary card alone was enough to track outcomes in an acceptable manner, yet they were largely unable to define the ideal standard.

While further analysis is required, the present research can conclude that this is an important area for future efforts and analysis. Any implementation project, whether DBT or another EBT, is ultimately futile if it does not translate to the ultimate goal of increased client care. If subpar tracking of outcomes occurs, the ultimate impact of DBT implementation on client care remains uncertain, and all further implementation efforts are rendered questionable. Based on the results of this analysis, DBT proponents should work to resolve this area by more clearly defining and disseminating the standard of tracking outcomes for teams. Then, teams should be trained to meet that standard. Because qualitative findings also

demonstrate logistical difficulties as a major barrier, proponents may also consider development and dissemination of more practical methods.

Finding 4 – generated hypotheses. A number of hypotheses for future research have been generated from the qualitative data. Some of many are:

1. DBT programs with separate implementation and consultation teams implement better than those without such separation.
2. University affiliations facilitate DBT implementation.
3. Cohesion, communication, and climate beyond the team level are also important to implementation. Such qualities apply between the team and administrators, ancillary staff, psychiatrists, the surrounding community, and the larger DBT community.
4. Multi-level buy-in is a key factor in DBT implementation.
5. Containing a collective empathy for the difficult-to-treat client fosters DBT implementation.
6. Programs valuing evidence-based practice implement better than those lacking such a value.
7. Developing a DBT culture facilitates DBT implementation.
8. The DBT skills themselves enable implementation.
9. Agency policies can impede or facilitate DBT implementation.
10. Top-down, hierarchical leadership from outside the team impedes implementation, while bottom-up leadership from within the team enables implementation.
11. Use of tape and videotape improves supervision, which improves implementation.
12. Funding impacts quantitative factors such as whether a practice employs DBT, how many therapists within the practice perform DBT, how many individuals with a particular insurance therapists will accept, and the size of a DBT caseload. Funding does not impact the quality of DBT implemented or the number of elements implemented.
13. An ongoing engagement with DBT-related trainings, books, manuals, and research studies enables DBT implementation.

14. A practice's use of technology impacts implementation, including engagement with clients through the Internet and text messaging.

These hypotheses are not an exhaustive list from the current data. Furthermore, due to the nature of qualitative research, none of these statements can be considered empirically validated, as each requires further testing and analysis. However, one of the stated goals of this research was to explore the area of inquiry that cannot be quantified at this time. This list demonstrates the achievement of that goal.

Limitations. All of the findings must be interpreted with caution due to several limitations. First, the direction of the quantitative relationships cannot be conclusively determined. For example, increased employment of DBT skills may improve team members' interpersonal abilities, whereby impacting team communication. In this way, implementation could improve team level communication and not the converse. While suggesting that communication impacts implementation, qualitative data cannot ultimately establish causality.

Second, respondents and participants were individuals, while the data collected were interpreted as representative of multi-level practice setting phenomena. This may impact the results by establishing relationships at the individual level that may or may not generalize to the practice setting level. Biases could impact each participant's assessment of both practice setting and implementation assessments. For example, individuals with an optimistic outlook might be more likely to rate both implementation and climate positively.

Third, by collecting data through the Internet, the potential for a self-selection bias exists. Certain individual qualities may make a person more likely to complete a 117-item survey over the Internet. Having an overrepresentation of such individuals may skew the results and decrease the generalization of findings.

Fourth, self-reporting of implementation of the number of elements of employed DBT may or may not accurately assess actual adherence or competence in DBT.

Fifth, at 79 participants, the sample size of the quantitative data is fairly small. With so few individuals, a small number of outliers can more easily skew results. Additionally, some of the non-significant statistical findings may actually be significant in the real world, but having too few participants may have prevented the establishment of these relationships.

Sixth, conceptual disagreements remain regarding the definition of inner setting constructs, and researchers may disagree with the constructs as defined by the researcher. Close inspection of the variables as defined in this study are warranted for those seeking to interpret the results.

Seventh, many employed measurement strategies are too new to have established reliability and validity, especially the questions designed by the researcher and the PETQ. While the PETQ displayed good internal reliability in this study, inspection of its validity is recommended.

Eighth, some aspects of inner settings could not be quantified at this time. More inner setting measures must be developed and researched in the future, especially implementation climate and readiness for implementation.

All of these limitations must be considered when interpreting the findings. Because of these limitations, the most compelling findings (a) possess strong statistical significance, (b) are bolstered by qualitative data, and (c) align with the larger body of implementation research. Nonetheless, future research should seek to repeat the findings under different conditions while minimizing these limitations.

Conclusion

This study illuminates many important aspects of practice settings connected to DBT implementation. Numerous practice-setting variables were found to impact DBT implementation, with varying degrees of empirical support. Some had strong quantitative and strong qualitative findings. Some had moderate quantitative findings and little qualitative support. Others had clear qualitative findings, but lacked quantitative support. A broad portrait of the fit between practice settings and DBT implementation was achieved, and the clearest findings suggest that social workers implementing DBT should be mindful of interpersonal processes within their practice settings. Due to methodological limitations, each individual finding should be interpreted with caution, and future research should seek to bolster findings and clarify discrepancies.

Despite these limitations, the implications of the findings are numerous. First, the methods employed can inform the larger body of implementation research, a field highly congruent with social work. While implementation scientists currently work toward defining and measuring constructs, wide sweeps of many constructs can help narrow their search. Also, many current studies require large

organizations and massive amounts of funding. This study has demonstrated the methodological options and possibilities available to those without such backing. Second, for DBT proponents, the current research identifies key factors within practice settings connected to successful implementation. Such an inquiry has tremendous impact for social workers seeking to improve lives by informing future implementation strategies and providing effective treatment to those in need.

Appendix A – The Consolidated Framework for Implementation

Research: Constructs and Short Definitions

The following chart is a reorganized layout of the constructs outlined by Damschroder et al. (2009), along with shortened definitions.

Domain 1: Intervention Characteristics	
(A) Intervention Source	Perception of key stakeholders about whether the intervention is externally or internally developed
(B) Intervention Strength & Quality	Stakeholders' perceptions of the quality and validity of evidence supporting the belief that the intervention will have desired outcomes
(C) Relative Advantage	Stakeholders' perception of the advantage of implementing the intervention versus an alternative solution
(D) Adaptability	The degree to which an intervention can be adapted, tailored, refined, or reinvented to meet local needs
(E) Trialability	The ability to test the intervention on a small scale in the organization, and to be able to reverse course (undo implementation) if warranted
(F) Complexity	Perceived difficulty of implementation
(G) Design Quality & Packaging	Perceived excellence in how the intervention is bundled, presented, and assembled
(H) Cost	Costs of the intervention and costs associated with implementing that intervention, including investment, supply, and opportunity costs
Domain 2: Outer Setting	
(A) Patient Needs & Resources	The extent to which patient needs, as well as barriers and facilitators to meet those needs are accurately known and prioritized
(B) Cosmopolitanism	The degree to which an organization is networked with other external organizations
(C) Peer Pressure	Mimetic or competitive pressure to implement an intervention; typically because most or other key peer or competing organizations have already implemented or in a bid for a competitive edge
(D) External Policy & Incentives	A broad construct that includes external strategies to spread interventions including policy and regulations, external mandates, recommendations and guidelines, pay-for-performance, etc.
Domain 3: Inner Setting	
(A) Structural Characteristics	The social architecture, age, maturity, and size of an organization
(B) Networks & Communications	The nature and quality of webs of social networks and the nature and quality of formal and informal communications within an organization
(C) Culture	Norms, values, and basic assumptions of a given organization
(D) Implementation Climate	The absorptive capacity for change, shared receptivity of involved individuals to an intervention and the extent to which use of that intervention will be rewarded, supported, and expected within their organization
1. tension for change	1. The degree to which stakeholders perceive the current situation as intolerable or needing change
2. compatibility	2. The degree of tangible fit between meaning and values attached to the intervention by involved individuals, how those align with individuals' own

3. relative priority	norms, values, and perceived risks and needs, and how the intervention fits within exiting workflows and systems
4. organizational incentives & rewards	3. Individuals' shared perception of the importance of the implementation within the organization
5. goals & feedback	4. Extrinsic incentives such as goal-sharing awards, performance reviews, promotions, and raises in salary and less tangible incentives such as increased stature or respect
6. learning climate	5. The degree to which goals are clearly communicated, acted upon, and fed back to staff and alignment of that feedback with goals
(E) Readiness for Implementation	6. A climate in which a) leaders express their own fallibility and need for team members' assistance and input; b) team members feel that they are essential, valued, and knowledgeable partners in the change process, c) individuals feel psychologically safe to try new methods; and d) there is sufficient time and space for reflective thinking and evaluation
1. leadership engagement	Tangible and immediate indicators of organizational commitment to its decision to implement an intervention
2. available resources	1. Commitment, involvement, and accountability of leaders and managers with the implementation
3. access to knowledge & info	2. The level of resources dedicated for implementation and on-going operations including money, training, education, physical space, and time
	3. Ease of access to digestible information and knowledge about the intervention and how to incorporate it into work tasks
Domain 4: Characteristics of Individuals	
(A) Knowledge & Beliefs about the Interventions	Individuals' attitudes toward and value placed on the intervention as well as familiarity with facts, truths, and principles related to the intervention
(B) Self-efficacy	Individual belief in their own capabilities to execute courses of action to achieve implementation goals
(C) Individual Stage of Change	Characterization of the phase an individual is in, as he or she progresses toward skilled, enthusiastic, and sustained use of the intervention
(D) Individual Identification with Organization	A broad construct related to how individuals perceive the organization and their relationship and degree of commitment with that organization
(E) Other Personal Attributes	A broad construct to include other personal traits such as tolerance of ambiguity, intellectual ability, motivation, values, competence, capacity, and learning style
Domain 5: Process	
(A) Planning	The quality and degree to which a scheme or method of behavior and tasks for implementing an intervention are developed in advance
(B) Engaging	Attracting and involving appropriate individuals in the implementation and use of the intervention through a combined strategy
1. opinion leaders	1. Individuals in an organization who have formal or informal influence on the attitudes and beliefs of their colleagues with respect to implementation
2. formally appointed internal leaders	2. Individuals from within the organization who have been formally appointed with responsibility for implementation as coordinator, project manager, etc.
3. champions	3. Individuals dedicated to supporting, marketing, and driving through an intervention, overcoming indifference or resistance within the organization
4. external change agents	4. Individuals who are affiliated with an outside entity who formally influence or facilitate intervention decisions in a desirable direction
(C) Executing	Carrying out or accomplishing the implementation according to plan
(D) Reflecting & Evaluating	Quantitative and qualitative feedback about the progress and quality of implementation accompanied with regular personal and team debriefing about progress and experience

Appendix B – Program Elements of Treatment Questionnaire (PETQ)

Dialectical Behavior Therapy	
Elements of Treatment Questionnaire	
<p>This Questionnaire is to be completed by each team leader. That is, only one questionnaire per team should be filled out. Before beginning the survey, check to make sure your unique 6-digit identification number is filled in on the scantron sheet in the space labeled “Identification Number”. Then, please indicate by filling in the appropriate bubble indicating whether <i>your current DBT Program</i> has the program elements or characteristics described below. If your program is not yet a DBT Program, please answer these questions in relation to your current non-DBT program.</p> <p>Please indicate on the last page any comments, notes, or questions you have about the program elements as written. If you believe that there are elements that are necessary, but have not been included here, please note those on the last page as well.</p> <p>Thank you for your participation! You are helping improve the practice of DBT.</p>	

YES		NO		
a.		c.		1. Do you have or have you started a DBT program? Mark yes even if you only have one component, e.g., team consultation. IF NO, STOP HERE AND SUBMIT FORM.

PROGRAM ELEMENTS SPECIFIC TO DBT				
YES	SOME	PLANNED	NO	Please fill in the appropriate scantron bubble - Is your program <i>CURRENTLY</i> structured as identified below?
a.	b.	c.	d.	2. DBT program uses DBT as the primary treatment for clients (even though outside of your DBT program clients may receive other non-DBT treatments).
a.	b.	c.	d.	3. DBT program uses DBT as the common orientation and language shared by individuals on the DBT consultation team. (Thus, behavioral descriptors and principles of learning are core explanations.)
a.	b.	c.	d.	4. Providers are not mandated to be part of the DBT program.
a.	b.	c.	d.	5. Not all providers in a unit, facility, or treatment program (where DBT is a sub-program or track) need to practice DBT.
a.	b.	c.	d.	6. Non-DBT providers do not attend DBT consultation team.
a.	b.	c.	d.	7. DBT program allows new providers to observe team before committing; “try outs,” however, are not allowed
a.	b.	c.	d.	8. DBT program provides a designated primary

				provider for each client who is responsible for developing, modifying (when needed) and organizing implementation of the client's treatment plan. If "no," skip to Question #11.
a.	b.	c.	d.	9. DBT primary provider provides one-on-one interventions sufficient for the severity of the client (assessment, targeting, etc.)
a.	b.	c.	d.	10. Within the overall DBT program, all clinical decision making that impact the treatment plan for a specific client is referred to that person's primary providers.
a.	b.	c.	d.	11. DBT program offers DBT skills training.
a.	b.	c.	d.	12. DBT program offers skills coaching.
a.	b.	c.	d.	13. DBT program ensures that crisis intervention and skills coaching outside of scheduled session are available to clients.
a.	b.	c.	d.	14. Provisions are made for involving others in patients' care when necessary. If "no," skip to Question #17.
a.	b.	c.	d.	15. With vulnerable or dependent populations, outreach is made to include care providers (e.g., family, residential staff) in treatment.
a.	b.	c.	d.	16. For adolescent DBT programs, parents, other family members and supportive individuals are included in treatment.

PROGRAM CONSULTATION TEAM				
YES	SOME	PLANNED	N/A	Please fill in the appropriate scantron bubble - Is your program <i>CURRENTLY</i> structured as identified below?
a.	b.	c.	d.	17. DBT program includes a DBT consultation team. If "no," skip to Question #28.
a.	b.	c.	d.	18. DBT consultation team is scheduled to meet weekly.
a.	b.	c.	d.	19. DBT providers are required to participate in scheduled DBT consultation team meetings
a.	b.	c.	d.	20. Each DBT consultation team has a designated team leader who functions as the executive and DBT clinical head of the consultation team.
a.	b.	c.	d.	21. At least one DBT consultation team member belongs to a professional organization with a code of ethics, and licensed or certified in one's state
a.	b.	c.	d.	22. DBT consultation team is responsible for treating and monitoring behavior of DBT providers.
a.	b.	c.	d.	23. DBT consultation team obtains a commitment for length of service for DBT providers before they join the consultation team.
a.	b.	c.	d.	24. DBT consultation team uses DBT commitment strategies to commit providers to consult team.

a.	b.	c.	d.	25. DBT consultation team allows each DBT provider sufficiently frequent opportunities to share successes, provide updates, and obtain consultation about their treatment of clients or team functioning.
a.	b.	c.	d.	26. DBT program makes it easy for DBT providers to access consultation from other DBT team members (phone list, phone tree).
a.	b.	c.	d.	27. DBT consultation team and/or DBT program (if larger than consultation team) implement clear contingencies for any DBT provider failing to work to gain Knowledge/Skills/Abilities, attend DBT consultation teams (miss rule), etc.

CLIENT TREATMENT AND SUPPORT				
YES	SOME	PLANNED	N/A	Please fill in the appropriate scantron bubble – Is your program <i>CURRENTLY</i> structured as identified below?
a.	b.	c.	d.	28. DBT providers can reasonably access emergency services near where the client resides.
a.	b.	c.	d.	29. Provides DBT services at times, places, and settings clients can reasonably access (e.g., clients can physically get to appointments, appointments are at times when clients are not typically at work, etc.).
a.	b.	c.	d.	30. DBT program conducts provider scheduling in a way that supports treatment functions (e.g., enough DBT providers to run groups, conduct individual sessions, cover backup, attend DBT consultation team, etc.).
a.	b.	c.	d.	31. The treatment spaces provided allow the forms or modes to be delivered adequately (e.g., large enough group room).
a.	b.	c.	d.	32. Scheduling for clients is conducted in a way that supports treatment functions and is consistent with DBT (e.g., 4-miss rule? 24-hour rule?).
a.	b.	c.	d.	33. DBT program determines the client's length of treatment based on severity of disorder and recommendations of effectiveness-based treatment manuals.
a.	b.	c.	d.	34. The length and frequency of individual DBT and DBT skills sessions supports functions and matches client severity and need.
a.	b.	c.	d.	35. DBT program requires that client continuation beyond initial treatment agreement depends on evaluation and recommitment. (i.e., does client show benefit?)
a.	b.	c.	d.	36. If your DBT program is a treatment nested within a larger treatment program, it provides support

				and/or access to auxiliary programs (e.g., behavioral management system, opportunities to generalize skills and increase protective factors broadly).
DBT TRACKING OF TREATMENT OUTCOMES				
YES	SOME	PLANNED	N/A	Please fill in the appropriate scantron bubble - Is your program <i>CURRENTLY</i> structured as identified below?
a.	b.	c.	d.	37. DBT program tracks client outcomes.
a.	b.	c.	d.	38. DBT program has a system in place for consultation team to periodically assess client satisfaction.
a.	b.	c.	d.	39. Outcome measures used within the DBT program have documented reliability/validity or indicators are nationally developed or recognized.
a.	b.	c.	d.	40. DBT program with multiple teams uses outcome measures or indicators that are standardized across the program.
a.	b.	c.	d.	41. DBT program gives available client-specific outcome data to programs and DBT providers to support clinical decision making and treatment planning.
a.	b.	c.	d.	42. DBT team leader monitors overall treatment completion rates.
a.	b.	c.	d.	43. DBT program periodically assess team members adherence and competence applying DBT.
a.	b.	c.	d.	44. DBT program periodically assesses team members for engagement and motivation to provide treatment services as identified
a.	b.	c.	d.	45. DBT program has system in place for documenting therapist attendance at consultation team and consultation team treatment notes

DOCUMENTATION OF TREATMENT (CLIENT AND CONSULTATION TEAM)				
YES	SOME	PLANNED	N/A	Please fill in the appropriate scantron bubble - Is your program <i>CURRENTLY</i> structured as identified below?
a.	b.	c.	d.	46. DBT client contact information is readily available to each DBT provider.
a.	b.	c.	d.	47. Intake/diagnostic information is readily available to DBT providers.
a.	b.	c.	d.	48. DBT program client treatment notes support DBT assessment and treatment, document risk factors and provides treatment plans for future actions.
a.	b.	c.	d.	49. DBT consultation team notes support DBT assessment and treatment aimed at maintaining adherent DBT for each provider, document team-related behaviors addressed (e.g., provider-

				interfering behavior, egregious or team-destroying behavior) and provide recommendations of consult members.
OUTPATIENT TREATMENT				
YES	SOME	PLANNED	N/A	Please fill in the appropriate scantron bubble – Is your program <i>CURRENTLY</i> structured as identified below?
a.	b.	c.	d.	50. Is your DBT program an Outpatient Treatment Program? If it is not, skip to Question #53.
a.	b.	c.	d.	51. DBT primary providers (and, when necessary, back-up primary providers) are available to clients during office hours to provide crisis intervention, skills coaching, and relationship repair.
a.	b.	c.	d.	52. DBT primary providers (and, when necessary, back-up primary providers) are available to clients outside of office hours to provide crisis intervention, skills coaching, and relationship repair.

MILIEU TREATMENT/DAY PROGRAM COMPREHENSIVE TREATMENT				
YES	SOME	PLANNED	N/A	Please fill in the appropriate scantron bubble – Is your program <i>CURRENTLY</i> structured as identified below?
a.	b.	c.	d.	53. Is your DBT program a Milieu Treatment/Day Program Treatment? If it is not, skip forward to Question #57.
a.	b.	c.	d.	54. The day program/milieu treatment structures skill generalization and cue exposure.
a.	b.	c.	d.	55. DBT primary providers (and, when necessary, back-up primary providers) are available to clients during office hours to provide crisis intervention, skills coaching, and relationship repair.
a.	b.	c.	d.	56. DBT primary providers (and, when necessary, back-up primary providers) are available to clients outside of office hours to provide crisis intervention, skills coaching, and relationship repair.

INPATIENT/RESIDENTIAL PROGRAM				
YES	SOME	PLANNED	N/A	Please fill in the appropriate scantron bubble – Is your program <i>CURRENTLY</i> structured as identified below?
a.	b.	c.	d.	57. Is your program an Inpatient/Residential Program? If it is not, skip forward to Question #61.
a.	b.	c.	d.	58. The inpatient/residential program structures skill generalization and cue exposure.

a.	b.	c.	d.	59. A DBT egregious behavior protocol is used.
a.	b.	c.	d.	60. DBT providers are available to clients on the unit to provide crisis intervention and skills coaching.

DBT ADAPTATION				
YES	SOME	PLANNED	N/A	Please fill in the appropriate scantron bubble - Is your program <i>CURRENTLY</i> structured as identified below?
a.	b.	c.	d.	61. Are you running a program that is a DBT Adaptation? If you are not running a DBT Adaptation, skip forward to Question #63.
a.	b.	c.	d.	62. The DBT program describes and documents the adaptations and stays consistent with DBT principles and assumptions.

DBT STAFF HIRING AND DEVELOPMENT				
YES	SOME	PLANNED	N/A	Please fill in the appropriate scantron bubble - Is your program <i>CURRENTLY</i> structured as identified below?
a.	b.	c.	d.	63. There is an identified process to recruit, and an assessment process to establish that a new DBT provider has the requisite Knowledge/Skills/ Abilities to provide services.
a.	b.	c.	d.	64. DBT consultation team or larger program has in place a staff development plan to maintain and improve DBT provider morale, motivation and DBT Knowledge/Skills/ Abilities.

ORGANIZATIONAL CHARACTERISTICS SUPPORTING DBT PROGRAMMING

PROGRAM DESCRIPTION				
YES	SOME	PLANNED	N/A	Please fill in the appropriate scantron bubble - Is your program <i>CURRENTLY</i> structured as identified below?
a.	b.	c.	d.	65. DBT program provides a program description to the public and provider.
a.	b.	c.	d.	66. DBT Program Description identifies the modes of DBT the program offers.
a.	b.	c.	d.	67. DBT Program Description matches treatment length to functions and goals of the DBT program. For example, an inpatient unit may offer a very short program vs. an outpatient clinic.
a.	b.	c.	d.	68. DBT program provides list of individuals on each

DBT consultation team.				
a.	b.	c.	d.	69. DBT program provides specific admissions criteria for each DBT treatment track or team (e.g., are clients included or excluded based on diagnosis, other demographic characteristics, or clinical decision about whether the individual is a good program fit?)
a.	b.	c.	d.	70. DBT Program Description provides a description of services available, benefits, and expectations to clients.
a.	b.	c.	d.	71. DBT Program Description makes available for providers a description of duties.
a.	b.	c.	d.	72. DBT Program Description describes any partnerships that exist with other agencies or providers.

TRAINING OF PROVIDERS AND SUPPORT STAFF				
YES	SOME	PLANNED	N/A	Please fill in the appropriate scantron bubble - Is your program <i>CURRENTLY</i> structured as identified below?
a.	b.	c.	d.	73. Training curricula are consistent with DBT.
a.	b.	c.	d.	74. Training covers all elements of the treatment model.
a.	b.	c.	d.	75. Training in evidence-based practices is provided for DBT providers.
a.	b.	c.	d.	76. Ongoing updates from the field of intervention and basic psychological science are provided for DBT providers
a.	b.	c.	d.	77. Training demonstrates attention to a use of latest published DBT treatment developments portion.
a.	b.	c.	d.	78. Administrators provide ongoing financial support for DBT program leaders to obtain consultation and training.
a.	b.	c.	d.	79. Administrators provide DBT manuals for trainees to use at job site.
a.	b.	c.	d.	80. Administrators allow time for training as a basic job expectation (not over and above workload) for salaried individuals.

PROVIDES ONGOING SUPERVISION				
YES	SOME	PLANNED	N/A	Please fill in the appropriate scantron bubble - Is your program <i>CURRENTLY</i> structured as identified below?
a.	b.	c.	d.	81. DBT supervision is available and tailored to provider skill level and client severity.
a.	b.	c.	d.	82. Supervisors demonstrate mastery of content they are supervising.

ASSESES AND FACILITATES FIDELITY OF PROGRAMMING				
YES	SOME	PLANNED	N/A	Please fill in the appropriate scantron bubble - Is your program <i>CURRENTLY</i> structured as identified below?
a.	b.	c.	d.	83. DBT program conducts appropriate self-assessment of DBT program adherence to the manual.
a.	b.	c.	d.	84. Within organizations, DBT team leaders and consultants review fidelity performance data.
a.	b.	c.	d.	85. When collected, individual DBT adherence data are given to individuals, teams, programs, and supervisors and used for purposed quality improvement.

Appendix C – Quantitative Survey: Independent Variables

STRUCTURAL CHARACTERISTICS – ORGANIZATIONAL AFFILIATION		
Stand-alone	Affiliated with a parent organization	Please fill in the appropriate scantron bubble – Is your program <i>CURRENTLY</i> structured as identified below?
a.	b.	86. Is your DBT program a stand-alone entity (such as a private practice), or are you affiliated with a larger organization (such as a hospital or parent corporation)?

STRUCTURAL CHARACTERISTICS – LEVEL OF CARE – PETQ Items 50, 53, 57			
Out-patient	Residential/ Inpatient	Milieu/ day treatment	Please fill in the appropriate scantron bubble – Is your program <i>CURRENTLY</i> structured as identified below?
a.	b.	c.	87. Does your DBT program primarily provide outpatient, inpatient, or residential treatment?

STRUCTURAL CHARACTERISTICS – AGE OF TEAM (<i>two variables</i>)	
Number of Years	To the best of your ability, please enter the appropriate number of years. Please round up or down to the closest year.
	88. How many years have at least two members of your current DBT team been practicing together as members of your team?
	89. How many years ago did your team complete intensive training?

STRUCTURAL CHARACTERISTICS – SIZE OF PROGRAM (<i>two variables</i>)	
Number of Years	To the best of your ability, please enter the appropriate quantity
	90. How many individuals are members of your current DBT team?
	91. How many individuals are directly involved with your DBT program (including team-members and non-team members, such as support staff)?

NETWORKS & COMMUNICATION – TEAM MEETING CONSISTENCY		
YES	NO	Please fill in the appropriate scantron bubble
a.	b.	92. In the last two months, has your DBT team missed any weekly clinical team meetings for any reason?

NETWORKS & COMMUNICATION - ORC "COHESION" SUBSCALE					
Disagree strongly	Disagree	Uncertain	Agree	Strongly agree	Please select the corresponding choice that best reflects your answer.
1	2	3	4	5	93. Staff members at your program work together as a team.
1	2	3	4	5	94. Mutual trust and cooperation among staff in your program are strong.
1	2	3	4	5	95. Staff members at your program get along very well.
1	2	3	4	5	96. Staff members at your program are quick to help one another when needed.
1	2	3	4	5	97. There is too much friction among staff members you work with. ®
1	2	3	4	5	98. Some staff in your program do not do their fair share of work. ®

NETWORKS & COMMUNICATION - ORC "COMMUNICATION" SUBSCALE					
Disagree strongly	Disagree	Uncertain	Agree	Strongly agree	Please select the corresponding choice that best reflects your answer.
1	2	3	4	5	99. More open discussions about program issues are needed where you work. ®
1	2	3	4	5	100. Ideas and suggestions in your program get fair consideration by management.
1	2	3	4	5	101. Your program staff is always kept well informed.
1	2	3	4	5	102. The formal and informal communication channels in your program work very well.
1	2	3	4	5	103. Staff members always feel free to ask questions and express concerns in your program.

CULTURE & CLIMATE - TCI-14 "VISION" SUBSCALE					
Disagree strongly	Disagree	Uncertain	Agree	Strongly agree	Please select the corresponding choice that best reflects your answer.
1	2	3	4	5	104. You are in agreement with your team's objectives.
1	2	3	4	5	105. Your team's objectives are clearly understood by other members of the team.
1	2	3	4	5	106. Your team's objectives can actually be achieved.
1	2	3	4	5	107. Your team's objectives are worthwhile to the organization.

CULTURE & CLIMATE - TCI-14 "PARTICIPATIVE SAFETY" SUBSCALE					
Disagree strongly	Disagree	Uncertain	Agree	Strongly agree	Please select the corresponding choice that best reflects your answer.
1	2	3	4	5	108. Our team has a "we are in it together" attitude.
1	2	3	4	5	109. Members of our team keep each other informed about work-related issues in the team.
1	2	3	4	5	110. Team members feel understood and accepted by each other.
1	2	3	4	5	111. There are real attempts to share information throughout the team.

CULTURE & CLIMATE - TCI-14 "TASK ORIENTATION" SUBSCALE					
Disagree strongly	Disagree	Uncertain	Agree	Strongly agree	Please select the corresponding choice that best reflects your answer.
1	2	3	4	5	112. Team members are prepared to question the basis of what the team is doing.
1	2	3	4	5	113. The team critically appraises potential weaknesses in what it is doing in order to achieve the best possible outcome.
1	2	3	4	5	114. Members of the team build on each other's ideas in order to achieve the best possible outcome.

CULTURE & CLIMATE – TCI-14 “SUPPORT FOR INNOVATION” SUBSCALE					
Disagree strongly	Disagree	Uncertain	Agree	Strongly agree	Please select the corresponding choice that best reflects your answer.
1	2	3	4	5	115. People in this team are always searching for fresh, new ways of looking at problems.
1	2	3	4	5	116. In this team we take the time needed to develop new ideas.
1	2	3	4	5	117. People in the team cooperate in order to help develop and apply new ideas.

READINESS FOR IMPLEMENTATION – PETQ “ONGOING SUPERVISION” SUBSCALE				
YES	SOME	PLANNED	N/A	Please fill in the appropriate scantron bubble – Is your program <i>CURRENTLY</i> structured as identified below?
a.	b.	c.	d.	118. DBT supervision is available and tailored to provider skill level and client severity.
a.	b.	c.	d.	119. Supervisors demonstrate mastery of content they are supervising.

READINESS FOR IMPLEMENTATION – FIDELITY ASSESSMENT – PETQ SUBSCALE				
YES	SOME	PLANNED	N/A	Please fill in the appropriate scantron bubble – Is your program <i>CURRENTLY</i> structured as identified below?
a.	b.	c.	d.	120. DBT program conducts appropriate self-assessment of DBT program adherence to the manual.
a.	b.	c.	d.	121. Within organizations, DBT team leaders and consultants review fidelity performance data.
a.	b.	c.	d.	122. When collected, individual DBT adherence data are given to individuals, teams, programs, and supervisors and used for purposed quality improvement.

READINESS FOR IMPLEMENTATION – EDUCATIONAL BACKGROUND	
Number of Individuals	To the best of your ability, enter the appropriate quantity. If you are unsure or do not know, please leave the item blank.
	123. How many individuals on your DBT team have less than a Masters Degree?
	124. How many individuals on your DBT team have a Master’s degree, but not a Doctoral Degree?
	125. How many individuals on your DBT team have a Doctoral degree or more?

READINESS FOR IMPLEMENTATION – FINANCES			
Yes	No	Unsure	Please select the corresponding answer- is your program <i>CURRENTLY</i> structured as identified below?
a	b	c	126. Does more than 1/3 of your practice’s funding come from self-pay?
a	b	c	127. Does more than 1/3 of your practice’s funding come from private insurance?
a	b	c	128. Does more than 1/3 of your practice’s funding come from public insurance or government funding?

READINESS FOR IMPLEMENTATION – REIMBURSEMENT FOR MODES				
Mostly Self-pay	Mostly private insurance	Mostly public/government	Mostly no payment	Please select your corresponding answer – Is your program <i>CURRENTLY</i> structured as identified below?
a.	b.	c.	d.	129. Describe your reimbursement for individual therapy.
a.	b.	c.	d.	130. Describe your reimbursement for group skills training.
a.	b.	c.	d.	131. Describe your reimbursement for between session coaching.
a.	b.	c.	d.	132. Describe your reimbursement for clinical team meetings.

READINESS FOR IMPLEMENTATION – OFFICE SPACE				
Yes	Some	Planned	No	Please select the corresponding answer – Is your program <i>CURRENTLY</i> structured as identified below?
a.	b.	c.	d.	133. Does your DBT program have adequate office space to carry out all DBT functions?

DBT ADAPTATION				
YES	SOME	PLANNED	N/A	Please select the corresponding answer – Is your program <i>CURRENTLY</i> structured as identified below?
a.	b.	c.	d.	134. Are you running a program that is a DBT Adaptation? If you are not running a DBT Adaptation, skip to end.
a.	b.	c.	d.	135. The DBT program describes and documents the adaptations and stays consistent with DBT principles and assumptions.

Appendix D: Qualitative Data Interview Guide

STRUCTURAL CHARACTERISTICS:

Please describe the structure of your practice setting (*look for social architecture, age, maturity, and size*).

How do you think your practice setting's structure impacts the DBT treatment it provides?

NETWORKS AND COMMUNICATION:

Please describe the social networks in your practice setting (*How do people get along? What kind of alignments do you notice?*)

How do you think these social networks impact the DBT treatment your practice provides?

Please describe the communication in your practice setting (*look for formal and informal channels*)

How do you think your practice's communication impacts the DBT treatment it provides?

CULTURE:

Please describe the culture of your practice setting (*Look for norms, values, and basic assumptions*)

How do you think your practice's culture impacts the DBT treatment it provides?

IMPLEMENTATION CLIMATE:

"Tension for Change:" Spend a moment and think about who the key stakeholders of your practice setting might be. Can you describe their views of having DBT in your setting? (*i.e. did they see a need for it?*)

"Tension for Change:" How do you think their views have impacted the utilization of DBT in your practice setting?

"Compatibility:" How compatible do you think DBT is with your practice setting (*look for meaning, values, norms, perceived risks, needs, workflow, and systems*)?

"Compatibility:" How do you think the compatibility (or lack thereof) between DBT and your practice setting has impacted its use?

"Relative Priority:" Compared to other treatment, do you think individuals at your setting collectively views the utilization of DBT as important? Please describe.

"Relative Priority:" How do you think this might impact the use of DBT at your setting?

"Organizational Incentives & Rewards:" What kinds of feedback and rewards are offered at your practice setting regarding the use of DBT? (*i.e. awards, performance reviews, promotions, raises, increased stature/ respect*).

"Organizational Incentives & Rewards:" How do you these have impacted the use of DBT at your practice setting?

“Goals & Feedback:” In your practice setting, how clearly are goals communicated, acted on, and fed back to staff?

“Goals & Feedback:” How do you think this impacts the use of DBT in your practice setting?

“Learning Climate:” How do leaders in your setting express their own fallibility and need for team member’s assistance? Do team members feel they are essential, valued, and knowledgeable partners? Do individuals feel psychologically safe to try new methods in your agency? Do you feel there is sufficient time and space for reflective thinking and evaluation?

“Learning Climate:” How do you think this learning climate impacts the use of DBT in your practice?

READINESS FOR IMPLEMENTATION:

“Leadership Engagement:” Do you feel the leaders in your agency are engaged in the utilization of DBT? (*look for commitment, involvement, and accountability*)

“Leadership Engagement:” How do you think this impacts the use of DBT in your agency?

“Available Resources:” Do you think your practice has the available resources to offer DBT? (*look for money, training, education, physical space, and time*)

“Available Resources:” How do you think the availability or resources (or lack of availability) impacts the use of DBT in your agency?

“Access to Knowledge and Information:” Do you feel your agency offers sufficient access to information and knowledge about DBT? (*including how to use it*)

“Access to Knowledge & Information:” How do you think this might impact the use of DBT at your setting?

Appendix E: Respondent Informed Consent

Title of the Research Study: Practice Setting Barriers and Facilitators to Dialectical Behavior Therapy Implementation: A mixed method analysis

Protocol Number: 816171

Sponsoring Institution: University of Pennsylvania School of Social Policy and Practice

Principal Investigator: Andrea Doyle, doylea@sp2.upenn.edu

Investigator: Matthew Ditty, mdit@sp2.upenn.edu, +1 (215) 370-2821

Emergency Contact: 24 Hour Emergency (ask for psychiatry resident on-call), +1 (215) 696-4420

If you choose to communicate identifiable information by email, you are consenting to associated email risks. Please note email is not secure and we cannot guarantee that information transmitted will remain confidential.

You are being asked to participate in a research study. **Your participation is voluntary** which means you can choose whether or not to participate. Before you make a decision you will need to know the purpose of the study, the possible risks and benefits of being in the study, and what you will have to do if you decide to participate.

The details of this study are outlined with the following questions you might have. You will be asked to agree to its terms below. If you do not understand what you are reading or are uncomfortable for any reason, feel free to not agree. You may want to print out this page for future reference. Please contact this study's principle investigator (PI) or **Matthew Ditty - mdit@sp2.upenn.edu, +1 (215) 370-2821** with any questions.

What is the purpose of the study?

The purpose of the study is to learn more about the factors that facilitate or impede the practical use of Dialectical Behavior Therapy (DBT). To do so, data will be collected about (a) practice settings and (b) the DBT treatment currently provided in those settings. The goal of this study is to understand how practice settings influence DBT implementation.

Why was I asked to participate in the study?

You are being asked to join this study because you are a mental health treatment provider who (a) has been intensively trained in DBT at least one year ago, (b) is currently practicing some form of DBT, and (c) speaks English.

How long will I be in the study? How many other people will be in the study?

Involvement will be for at least one online survey that lasts approximately 30-40 minutes (117 Questions). If you are willing, you may also participate in a one-hour follow-up telephone interview.

The number of respondents and participants in the study are currently unknown. Surveys will be conducted to achieve the largest sample size possible within the time limitations of Matthew Ditty's doctoral studies. Interviews will continue until the researcher determines that enough information has been gathered.

Where and when will the study take place?

The survey will take place whenever and wherever you have online connection. The interview, if you so choose, will take place over the phone whenever you are able. Strong preferences will be given to times convenient to you. Preferably, the interview will occur at a time and place when you are interruption free and feeling comfortable.

What will I be asked to do?

In the survey, you will be asked questions about:

1. Your current practice setting
2. The type of DBT you currently offer.

Your answers will be used as a part of a larger set of quantitative data, and all identifying information will be kept confidential.

If you choose to participate in the qualitative interview, the same general questions will be asked, but in a more open-ended manner. Qualitative responses will be recorded, coded, and analyzed, but all identifying information will be removed and kept confidential.

What are the risks?

One risk from being a part of this study is that you may be asked questions that you may feel are personal or embarrassing. You do not have to answer any question if you do not want to. There is always a risk of a loss of confidentiality when personal data is collected. The researcher takes appropriate steps to lessen this risk, including safeguarding your information in locked cabinets, password-protecting any digital files, and not using your name and other information to identify you whenever possible. Furthermore, once your interview is transcribed, the recording will be destroyed. While all steps will be taken to protect your confidentiality, interceptions of personal data are possible.

How will I benefit from the study?

The information you provide will inform DBT implementation in current and future settings. Given the evidence that DBT produces such vital outcomes in many people's lives, increased access to the treatment benefits us all.

What other choices do I have?

Your alternative to being in the study is to not be in the study.

What happens if I do not choose to join the research study?

You may choose to join the study or you may choose not to join the study. Your participation is voluntary.

There is no penalty if you choose not to participate in the research study. You will lose no benefits or advantages that are now coming to you, or would come to you in the future. No one in your practice will be made aware of your choice to participate or not.

When is the study over? Can I leave the study before it ends?

The study is expected to end in late 2012/ early 2013.

The study may be stopped without your consent for the following reasons:

- o The principal investigator feels it is best for any reason. If this happens, you will be informed of the reasons why.
- o You have not followed the study instructions.
- o The principal, the sponsor, or the Office of Regulatory Affairs at the University of Pennsylvania can stop the study anytime.

You have the right to stop your participation in the research study at anytime. There is no penalty or loss of benefits to which you are otherwise entitled if you decide to do so.

If you no longer wish to be in the research study, please contact *Matthew Ditty* - mdit@sp2.upenn.edu or +1 (215) 370-2821 and you will be removed from the study.

How will confidentiality be maintained and my privacy be protected?

All information taken about you for this study is confidential, except as may be required by law. Confidentiality will have to be broken if you express a current plan to harm yourself or others, or if you report that you have committed child abuse or neglect. In such cases, we may be required to take certain actions (e.g. contact local authorities or family members), as specified by Pennsylvania law. Information taken about you will be kept in locked files and/or password-protected computer files. Research investigators will be the only people with access to this data. Furthermore, authorized representatives of the University of Pennsylvania Institutional Review Board (IRB), a committee charged with protecting the rights and welfare of research participants, may be provided access to medical or research records that identify you by name. These files will only be used for this study. When information is taken out of these files, it will not have your name on it. Identifying data will be destroyed no later than one month after all the data is collected. Published reports containing data from the internet survey will be reported in aggregate form (where no individual responses can be identified). Information provided in the telephone interviews will be presented so that identification is impossible.

In addition, your interview will be audio recorded. The digital recording from your interview will be stored in a personal computer in a password protected file and saved under a file name free of identifying information. It will then be destroyed as soon as it is transcribed, and all transcriptions will be completed in a timely manner. All transcriptions will be saved in a password-protected computer file, with your identifying information omitted. Any identifying information used for tracking purposes (such as setting up the interview) will also be saved on a password-protected computer and deleted within one month after data collection ends.

What happens if I experience discomfort from being in the study?

If you feel distress or any emotional discomfort while participating in the study you may terminate your involvement at any time. You may also contact the PI, investigator, or the emergency contact cited at the beginning of this form.

There are no plans for the University of Pennsylvania to pay you or give you other compensation for any emotional distress. You do not give up your legal rights by agreeing to this form.

Will I have to pay for anything?

There will be no charge to you for participation in this research study.

Will I be paid for being in this study?

Online respondents will be entered into a raffle to receive one of three monetary rewards upon survey completion: (a) \$150, (b) \$75, or (d) \$25.

Those agreeing to a follow-up interview will receive an additional small token of appreciation- a \$10 gift certificate to Starbucks upon completion of the interview.

Please note that if you receive more than \$600.00 compensation in one year for participation in research studies at the University of Pennsylvania, you must provide an Individual Tax Identification Number or Social Security Number for tax purposes.

Who can I contact with questions, complaints or if I'm concerned about my rights as a research subject?

If you have questions, concerns or complaints regarding your participation in this research study or if you have any questions about your rights as a research subject, you may contact the Principal Investigator listed on page one of this form. If a member of the research team cannot be reached or you want to talk to someone other than those working on the study, you may contact the Office of Regulatory Affairs with any question, concerns or complaints at the *University of Pennsylvania* by calling +1 (215) 898-2614.

***By clicking “I accept,” you are agreeing to take part in this research study. If you have any questions or there is something you do not understand, please contact the Principle Investigator via email at adoyle@sp2.upenn.edu.**

I accept.

I do not accept.

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