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Treatment of Co-Morbid Methamphetamine Substance Abuse and Borderline Personality Disorder Features Using Modified Dialectical Behavior Therapy

Jessica R. Schultz Fischer
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TREATMENT OF CO-MORBID METHAMPHETAMINE SUBSTANCE ABUSE
AND BORDERLINE PERSONALITY DISORDER FEATURES
USING MODIFIED DIALECTICAL BEHAVIOR THERAPY

by

Jessica R. Schultz Fischer

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requirements for the
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Dr. Amy E. Naugle, Advisor

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TREATMENT OF CO-MORBID METHAMPHETAMINE SUBSTANCE ABUSE AND BORDERLINE PERSONALITY DISORDER FEATURES USING MODIFIED DIALECTICAL BEHAVIOR THERAPY

Jessica R. Schultz Fischer, Ph.D.
Western Michigan University, 2007

The study investigated the effectiveness of a time-limited, skills-based treatment in a population of female substance abusers. This project implemented a pilot clinical trial to evaluate the effectiveness of a 12-session modified Dialectical Behavior Therapy (DBT) protocol among a small sample of women, with co-morbid borderline personality disorder features, receiving concurrent outpatient treatment for methamphetamine abuse. A non-concurrent multiple baseline design was used. In addition to on-going assessment conducted during baseline and weekly over the course of treatment, a comprehensive assessment battery was administered pre-, and post-treatment as well as at 1 and 3 months following treatment. Findings suggest that notable improvements were made in several variables of interest among treatment completers and some non-completers. This study suggests that an abbreviated version of DBT, adapted to substance use and dependence issues, can be modestly effective for females with BPD features and MA dependence who demonstrate persistent attempts for change and mild to moderate symptoms of psychopathology. Clinical and research implications for DBT and substance use problems are discussed.
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Jessica R. Schultz Fischer
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CHAPTER I

LITERATURE REVIEW

*Methamphetamine Use and Abuse*

Although methamphetamine (MA) was a widely prescribed medication in the United States in the 1950's and 1960's as a common method to treat depression, obesity, and other ailments, the drug has become one of the most widely used illicit substances (Anglin, Burke, Perrochet, Stamper & Dawud-Noursi, 2000). Recent estimates of MA use in the United States indicate nearly epidemic proportions with 8.8 million people, or 4.0 percent of the population, reporting having tried MA at some time in their lives (NIDA, 2002). Other reports suggest that the United States is not the only country trying to contain a widespread MA abuse problem; several other developed countries are seeing sharply increasing rates of MA use as well. Additionally, in a recent report on drug-related episodes from hospital emergency departments in 21 metropolitan areas, it was reported that methamphetamine-related episodes presenting to the ER increased from approximately 10,400 in 1999 to 13,500 in 2000, which represents a 30 percent increase (NIDA, 2002).

MA use and abuse is a significant health care concern for numerous reasons. Recently, MA has been linked to various detrimental effects, including anxiety, insomnia, paranoia, hallucinations, stroke, cardiac arrhythmia, and even death (Anglin, et al., 2000;
Rawson, Gonzales & Brethen, 2002). MA is a neurotoxic substance and studies have demonstrated the presence of significant structural brain abnormalities in MA abusers, which may account for some MA-related symptoms (Thompson, Hayashi, & Simon, 2004). Some structural brain defects in MA abusers have been compared to those seen in early dementia and schizophrenia. Other studies have noted significant neurological problems (i.e., memory and learning) associated with MA use and abuse (Anglin et al., 2000; Rawson, Gonzales & Brethen, 2002).

In addition to the negative consequences for individual MA users, there are significant social costs related to use and abuse of this illicit drug, including costs of arrest, prosecution, and incarceration (McCollister, French, Inciardi, Butzin, Martin, & Hooper, 2003). Other authors highlight that children of MA abusers are at greater risk for abuse, neglect, dysfunctional social development, and psychological and educational disturbances (Anglin et al., 2000; Haight, Jacobsen, Black, Kingery, Sheridan & Mulder, 2005). These risk factors place this vulnerable group of children at greater chance for future psychological problems, including substance abuse. Some researchers (Rawson et al., 2002) suggest that these problems will not likely disappear in the near future, given that MA is relatively easy to produce and is considered inexpensive compared to other illicit substances.

Despite these substantial problems, the use of MA continues to rise and treatment and abstinence programs have had a limited impact on the current problem. MA dependence is a very difficult disorder to treat with only limited success rates (Anglin et al., 2000). Some moderate success has been achieved by implementing various types of cognitive behavioral therapies (CBT; Irvin, Bowers, Dunn & Wang, 1999), such as
relapse prevention and contingency management, some strategies that include family education or support groups, in addition to several that highly suggest various types of self-help or 12-step meetings as a stand alone treatment or adjunctive in order to gain additional support (Khantzian and Mack, 1994). One recent study by Rawson et al (2002b) found that when comparing pharmacological treatment, CBT, and contingency management (CM), which have been found to be fairly efficacious in achieving and maintaining abstinence for substance abuse and dependence (SAD; Carroll, 1996; Higgins, Alessi & Dantona, 2002), both CBT and CM showed efficacy in achieving abstinence. The researchers also note that CM had significantly more efficacy during treatment, but had comparable effects to that of CBT at follow-up. Carroll (1996) reviewed 24 randomized controlled trials for studies implementing relapse prevention, which incorporates various components of CBT for SAD, and found that overall, relapse prevention appears to be efficacious, but results are not consistent when comparisons are made to other active treatments. Another study (Rawson et al., 2004) examined the matrix model, which is a manualized treatment protocol consisting of 16 weeks of cognitive behavioral therapy groups, family education groups, social support groups and individual counseling, with frequent attendance at 12-step meetings encouraged. Additionally, all treatment sessions are delivered using a non-judgmental, non-confrontational style and employ extensive positive reinforcement by therapists and peers for behavior change. This study found that although those in the matrix model had higher attendance rates and more abstinence rates of a longer duration during treatment, abstinence gains were not significantly different than treatment as usual groups at follow up. Regardless, others endorse the matrix model (Maxwell, 2005), in addition to
pharmacological interventions that have also proved to be moderately efficacious in the treatment of some SAD problems. However, other researchers have found that a more subtle approach for increasing motivation to reduce use or achieve abstinence among those with SAD problems have also been effective with some populations (Brown & Miller, 1993; Miller, Yahne, Tonigan, 2003). Lastly, there has been much controversy about the efficacy of 12-step self help programs (i.e., narcotics anonymous or alcoholics anonymous), and many suggest this type of program to achieve abstinence (Khantzian and Mack, 1994).

Despite the encouraging results of some studies, the complex presentation of persons with SAD are often met with resistance when attempting to achieve abstinence, especially when evaluating lasting and meaningful change. SAD treatment may not be very efficacious due to the complex interaction of the function of an individual's use, the multi-dimensional presentation of symptoms and co-morbid psychiatric problems, which highlight the need for additional treatment options. It is necessary to develop effective interventions that can appropriately target the multi-faceted problems that those with substance abuse and dependence problems face.

One important consideration in the treatment of MA abusers is the powerful addictive potential of the drug (Castro, Barrington, Walton & Rawson, 2000; Rawson, et al., 2002). The reinforcing effects of MA (i.e., lasting euphoria of 8-24 hours, decreased fatigue and appetite, and increased energy and alertness) and the aversive side effects of withdrawal from the substance are often so potent for an individual that even the most effective treatments have limited success rates (Anglin et al., 2000). Treatment programs for MA abuse should include adequate incentives for abstinence or powerful negative
consequences for continued use that sufficiently motivate individuals to decrease substance involvement and effectively reduce relapse rates.

Another consideration in treatment of MA abusers is that individuals with substance abuse problems often present with co-morbid psychiatric disorders. Recent studies have shown that between 30 and 60 percent of those with SAD problems also have concurrent mental health diagnoses including personality disorders, major depression, schizophrenia, and bipolar disorder (Leshner, 1999). The presence of other psychological problems often complicates intervention with the already difficult to treat substance abuse population. It is highly likely that this population will continue to use unless treatments are effective at altering psychological variables that may be functionally related to substance use.

*Conceptualization of Substance Abuse and Dependence*

Although some common theories of SAD focus on deviant, criminal, or immoral tendencies and conceptualize SAS as a disease, other theories frame SAD as a set of learned behaviors. More specifically, persons that first use illicit substances often experience a very positive or euphoric physiological effect, which positively reinforces the behavior of using that substance. However, over time substance use is maintained through negative reinforcement (Barett & Marlatt, 1999; Dimeff, Rizvi, Brown & Linehan, 2000; Linehan, 1993a). That is, SAD functions to decrease or avoid distressing or unpleasant thoughts, feelings, and other uncomfortable private experiences. This viewpoint recognizes that although many persons with SAD problems often began using due to social or peer pressures and positive reinforcement, the continued and more problematic use or abuse of substances is often derived from a desire to either avoid or
reduce psychological distress that stems from negative emotional states and interpersonal conflict. If additional treatments are developed to address the underlying function of SAD on an individual basis, it will be effective at reducing both the extensive individual and rising social costs of substance-related problems.

One line of research that holds this functional conceptualization of SAD focuses on the difficult to treat presentation of Borderline Personality Disorder (BPD) features in substance abusing populations (Kosten, Kosten & Rounsaville, 1989; Links, Keslegrave, Mitton, Van Reekum & Patrick, 1995). BPD is characterized by emotional vulnerability or emotional regulation difficulties, self-invalidation, unrelenting crises – such as fears of abandonment, impulsivity which may be self-damaging, unstable and intense interpersonal relationships, and suicidal or self-mutilating behaviors, which are often an attempt to regulate distressing emotions (Linehan, 1993a). Linehan also suggests that the characteristics one observes in BPD can be understood from a biosocial perspective – that is, as stepping from a combination of a dysfunction of the emotion regulation system (which results from biological irregularities) and an invalidating or dysfunctional environment.

The prevalence of BPD has been found to range from .2 - 2.8% in the general population and about 15% among psychiatric inpatients (Widiger & Weissman, 1991), with women representing 76% of those with BPD. Another study (Hatzitaskos, Soldatos, Kokkevi & Stefanis, 1999) has highlighted the interrelationship of BPD and SAD in a population of inpatients finding that 76% of those with BPD reported abuse of at least one substance. Others note that among women with BPD, 25% meet criteria for either substance abuse or dependence (Miller, Abrams, Dulit, & Fyer, 1993). These studies
emphasize the magnitude of SAD problems among those with BPD. The damaging behaviors and deficits that characterize BPD (e.g., poor emotion regulation, impulsivity, and unstable and intense interpersonal relationships) can contribute to the difficulty those with substance abuse problems have in achieving and maintaining abstinence. Subsequently, additional treatment modalities (e.g., Dialectical Behavior Therapy, DBT) have begun to be applied with substance abusing clients to address these key issues.

Dialectical Behavior Therapy

Conceptualization. DBT was originally developed to treat chronically suicidal patients with a history of self-harm and suicidal behavior, but has been expanded for primary treatment for those with BPD (Linehan, 1993a; Linehan, 2000). Conceptually, clients learn skills that facilitate use of more skillful strategies for managing intense affect dysregulation, rather than engage in impulsive dysfunctional behaviors (i.e., parasuicidal or self-injurious behaviors). The skills taught in DBT are alternative, skillful behaviors that focus on the functional coping needs of each individual. This framework helps the client to respond to situations by changing, avoiding or leaving a situation so it is no longer problematic, or tolerating and accepting a situation that is both unavoidable and aversive so that an effective and rewarding life can still take place in spite of difficulties (Linehan, 2000).

The four main components of standard DBT practice include 1) an individual session once per week to facilitate inhibition of maladaptive behaviors and utilization of adaptive and skillful responses, 2) a group skills training once per week to facilitate learning and development of new skillful behavior, 3) telephone consultation to promote asking for help in effective ways and generalization of newly learned skills, and 4) case
consultation meetings to assist therapists with the implementation of DBT (Linehan 1993a). This program is designed to last at least one year, with the possibility for additional therapy following treatment completion. Additionally, the DBT model has four primary treatment goals listed in order of priority: reducing suicidal behaviors, therapy interfering behaviors, and quality of life interfering behaviors, and increasing behavioral skills (Linehan, 1987). However, Linehan (1993a) also emphasizes that the pervasive goal of DBT is to increase dialectical behavior patterns or dialectical thinking, which helps the client to view reality as complex and multifaceted, and form the ability to not only entertain contradictory thoughts and points of view, but to integrate them as well.

*Efficacy.* Although currently only four randomized clinical trial treatment outcome studies for DBT have been conducted, research suggests that the approach is quite successful for those with chronic suicidality and BPD (Koons, et al., 2001; Linehan et al., 2006; Linehan, Armstrong, Suarez, Allmon & Heard, 1991; Linehan, Heard & Armstrong, 1993; Linehan, Tutek, Heard & Armstrong, 1994; Verheul, van den Bosch, Koeter, de Ritter, Stijnen & van den Brink, 2003). First, Linehan et al. (1991) utilized a randomized clinical trial to compare the usefulness of DBT, compared to treatment as usual (TAU) for 44 participants with BPD. Results showed that DBT participants were significantly more likely than TAU subjects to begin therapy, remain with the same therapist for the year, and remain in therapy. Also, DBT participants had significantly fewer inpatient hospitalization days, significantly less frequent parasuicidal acts and less medically risky parasuicidal episodes than TAU controls. DBT participants also demonstrated better treatment retention than TAU participants (Linehan, et al., 1993). However, it should be noted that on measures of depression, suicidal ideation,
hopelessness, and survival/coping based reasons for living there were no significant
differences between treatment groups, as both had made moderate improvements. This
study also demonstrated that participants in DBT demonstrated greater reductions in trait
anger and better overall social adjustment (interviewer-rated and self-rated; Linehan et
al., 1994) than TAU participants.

Efficacy of DBT was also demonstrated in a study conducted with 20 women
with BPD assigned either to DBT or TAU for 6 months (Koons et al., 2001). Compared
to controls, participants in the DBT treatment group reported significantly greater
decreases in parasuicidal acts, experienced anger, and dissociation. Decreasing trends
were also evident for number of hospitalizations, but were not statistically significant, in
addition there was an overall reduction of BPD criterion behavior patterns and symptoms
of depression among both groups. Additionally, Verheul et al. (2003) demonstrated
efficacy in a randomized clinical trial with 58 women with BPD assigned to either DBT
or TAU. After one year of treatment, researchers found that DBT resulted in lower
attrition rates and greater reductions in self-mutilating and self-damaging impulsive
behaviors as compared to TAU. The differences were even greater among DBT
participants who had higher baseline frequencies of self-harm.

Most recently DBT was demonstrated to be efficacious in a study with 101
women clinically referred for treatment due to recent suicidal and self-injurious behaviors
(Linehan et al., 2006). These participants were matched to condition on age, suicide
attempt history, negative prognostic indication, and number of lifetime self-injuries and
psychiatric hospitalizations and then assigned to either DBT or expert, non-behavioral
treatment in the community for one year. Following the year of treatment and one
additional year of follow up, researchers found that DBT participants were half as likely
to make a suicide attempt, required less hospitalization for suicide ideation, and had
lower medical risk across all suicide attempts and self-injurious acts combined.
Moreover, subjects receiving DBT were less likely to drop out of treatment (although
drop out rate for DBT was 25%) and had fewer psychiatric hospitalizations and
psychiatric emergency department visits.

Together, these four major studies provide evidence for the efficacy of DBT as a
treatment of choice for persons with symptoms of BPD. It should be noted that there have
been several other studies utilizing DBT to treat BPD features over the past several years
that have also demonstrated moderate to superior levels of success. However, these
studies used less stringent methodological criteria and therefore will not be discussed in
detail in this review.

Despite the growing body of literature that suggests at least moderate efficacy of
DBT, some critics are still wary of the value or effectiveness of DBT. Some have even
voiced opposition to the conceptual approach of using treatments targeted at behavioral
changes of personality disordered persons (e.g., BPD) and the subsequent methodological
studies that examine the behavior changes (Benjamin, 1997), because it contradicts the
inherent meaning of a personality disorder, and ignores other dynamic concepts like
unconscious wishes and fears. While Hoffman (1993) acknowledges that the
effectiveness of DBT appears promising, he questions whether other treatment related
variables more fully account for the documented positive treatment outcomes (i.e.,
treatment availability, treatment intensity and other related factors). Sheel (2000) further
argues that larger replication studies to support validity and additional research to
determine key factors of the effectiveness DBT are needed. Others echo the need for additional research and suggest that over-enthusiasm for DBT is premature (Levendusky, 2000). Linehan (1993a) herself argues that drawing conclusions about the effectiveness of DBT from only one study is unwarranted and suggests that additional treatment outcome research on DBT is needed.

Regardless of these concerns regarding the efficacy and utility of DBT, the treatment approach continues to be applied not only to BPD populations, but also to other difficult to treat populations. In more recent studies, DBT has been applied and adapted, with promising outcomes, to several other difficult to treat behaviors such as drug abuse, aggressive behaviors, violent behaviors, and eating disorders, in addition various populations including adolescents and depressed elders (Linehan, 2000; Robins & Chapman, 2004; Scheel, 2000). DBT has also been adapted to accommodate adults in a residential setting (Wolpow, Porter & Hermanos 2000), male and female veterans at a VA medical center (Spoont, Sayer, Thuras, Erbes & Winston, 2003), incarcerated males with anger and violence problems (Evershed, Tennant, Boomer, Rees, Barkham & Watson, 2003) among others. Linehan (2000) notes that the wide range of populations that appear responsive to DBT can be explained according to common theoretical underpinnings that may account for the broad and successful implementation. These common participant factors include: 1) history of being difficult to treat, 2) high attrition or drop out rates, 3) multiple diagnoses or clinically relevant problems, and 4) problem behaviors related to difficulty regulating the intensity and range of various emotions. Subsequently, among the difficult to treat populations for which DBT might prove to be a
useful intervention strategy, SAD populations appear to share many common factors targeted with DBT interventions.

Applications of DBT to Substance Abuse and Dependence

A few key studies have been conducted in the past several years to further examine the effectiveness of DBT as it has been applied to those with BPD and SAD. As noted above, the theoretical framework and goals of DBT are applicable to SAD populations, as the literature suggests that substance abuse can be categorized as an impulsive, dysfunctional self-harm behavior, similar to other parasuicidal behaviors that often serve to regulate emotions during times of intense distress (Dimeff, Rizvi, Brown & Linehan, 2000).

One study (van den Bosch, Verheul, Schippers & van den Brink, 2002) found that a standard application of DBT (one year of individual sessions and skills training groups) effectively reduced borderline symptoms, such as self-harm behaviors (not related to substance abuse) and suicide attempts, in a population that also struggled with co-morbid substance abuse. However, the standard DBT treatment had no effect on substance abuse problems, including frequency of use. The researchers (van den Bosch et al., 2002) concluded that DBT can be an effective treatment to address self-harm behaviors for those struggling with BPD and co-morbid SAD, but other treatments or adapted protocols are needed to better address the SAD problems.

Likewise, other studies found that a slightly modified DBT treatment package, which still included individual sessions and skills training, but also included a focus on key substance abuse-related issues, was effective in reducing SAD in those with BPD (Dimeff et al., 2000; Linehan et al., 2002; Linehan, Schmidt, Dimeff, Craft, Kanter &
First, Dimeff et al., (2000) report encouraging, but modest outcomes from an uncontrolled pilot study of 3 women who met criteria for BPD and methamphetamine-dependence. Of the 2 treatment completers, both were abstinent from illicit substances at 6 months into treatment, and were maintained at time of assessment, 6 months later. Dimeff et al. (2000) also highlight the modifications to the original DBT protocol that were used in this study, which tailored the treatment to difficulties pertinent to SAD. Some key modifications were a dialectical perspective on drug use and abstinence, additional attachment strategies for difficult clients, skills additions that are directly related to SAD difficulties (e.g., mindfulness to endure cravings for a substance), and incorporation of relapse prevention strategies from the cognitive-behavior therapy literature.

Lending additional support for the potential effectiveness of DBT for treating substance abuse, Linehan et al., (1999) included 28 females in a randomized clinical trial. Participants met criteria for BPD and a substance use disorder, and then were randomly assigned to either DBT modified for substance abuse or TAU in the community for one year. This study found that those assigned to DBT had significantly greater reductions in substance abuse as measured by structured interview and urinalysis results, not only during the active treatment, but also at follow-up assessment. DBT also had greater retention rates for participants and demonstrated significantly greater gains in global and social adjustment at follow-up, as compared to TAU (Linehan, et al., 1999). Even though these results appear promising, the authors recognize that it remains unclear if these significant differences can be contributed to key features of the DBT protocol or a well-organized and intensive psychotherapy.
Linehan et al., (2002) further investigated the effectiveness of modified DBT with a population of 23 opiate dependent women, who met criteria for BPD. This sample was randomly assigned to modified DBT or Comprehensive Validation Therapy plus the 12-step approach (CVT + 12; a manualized approach that utilizes major acceptance-based strategies, similar to DBT, plus involvement in a 12-step program). Both samples also received opioid replacement medication in order to help ease the negative withdrawal effects. Linehan et al., (2002) found that both treatments were effective at reducing opioid use (measured by self report and urinalysis) and maintaining effects at the 4-month follow-up, but DBT demonstrated better maintenance of treatment gains during active treatment, while CVT+12 participants had significantly increased substance use during the last 4 months of treatment. However, CVT+12 had higher retention rates (100%), while DBT had notably lower retention rates (64%). Also, both groups demonstrated improvement in global functioning, with barely notable differences, and those participants in DBT had more accurate rates of self-reporting opiate use. This study provided a more stringent test of internal validity and effectiveness for DBT, with opioid-dependent women with BPD (Linehan et al., 2002). However, this study also clearly suggests that a pure reinforcement and acceptance treatment that avoids the use of behavioral change strategies, such as CVT+12, holds potential (i.e., especially for retention) and should be investigated further.

Overall, it appears as though DBT, modified to better serve those with SAD problems, should be considered a viable option to successfully reduce substance use, emotional dysregulation and other problems associated with co-morbid SAD and BPD. However, the studies completed to date are not able to conclusively determine whether
demonstrated treatment effects of DBT can be attributed to the intensive, long-term characteristics of the intervention package or to the actual skill components included in DBT treatment. To date, there are no studies that explore the effectiveness of an abbreviated DBT treatment protocol. Such an investigation may allow us to explore whether clinically significant changes in SAD and other related BPD symptomatology can be detected by focusing on core DBT skills, while eliminating or isolating other treatment components that exist in standard DBT implementation (e.g., duration of treatment, intensity of protocol, several hours of contact with DBT trained treatment team, etc.).

**Conceptualization**

This research project aimed to explore the effectiveness of an abbreviated DBT approach in addressing the needs of females struggling with substance abuse and BPD features. Specifically, this project explored if a 12 session DBT protocol would positively impact the treatment progress (e.g., increased abstinence, reduced cravings, increased attendance of treatment sessions, and better coping skills related to emotion dysregulation, decreased impulsivity and distress tolerance) of methamphetamine dependent women who are concurrently enrolled in treatment as usual at the substance abuse treatment program at Van Buren /Cass District Health Department (VBCDHD). The findings of this project will continue to aid in the development of effective and timely interventions for those struggling with substance abuse and other mental health problems, and to further explore integration of community-based programs with time-limited additional resources. Treatment will be delivered with a sole focus on core skills
and a dialectical, supportive perspective in order to evaluate type and quantity of impact on relevant outcome measures.

Hypotheses. Specifically, this study investigated overall effectiveness of the treatment protocol as assessed by the following hypotheses.

Hypothesis 1 (H1): It was predicted that treatment would facilitate a reduction in the participants' overall level of distress. This outcome was measured by the Global Severity Index on the Brief Symptom Inventory.

Hypothesis 2 (H2): It was predicted that treatment would facilitate an increase in positive coping behaviors, skillful responses to situations and cravings to use, and DBT related skills (i.e., emotion regulation, mindfulness). These variables were measured on a weekly basis via the abbreviated COPE inventory, which was administered during baseline, during active treatment and at posttreatment and follow-up. Additionally, the participant completed a diary card on a daily basis beginning at pretreatment assessment and the active treatment phase. Participants also completed a diary card for each of the follow-up sessions. Participants also were assessed by completing the Substance Abuse Risk Response Test Situations, Emotion Regulation Questionnaire, and the Kentucky Mindfulness Inventory, which were administered at pre, posttreatment and follow up.

Hypothesis 3 (H3): It was predicted that treatment would facilitate a reduction in substance use, cravings to use substances, and other self-harm thoughts and behaviors. These outcomes were assessed by self-reported substance use and cravings to use substances on a daily basis using the participants' diary card, and at pre, posttreatment and follow-up with the SCID Substance Abuse & Dependence and the Drug Use
Questionnaire. This outcome also was measured by urinalyses results collected on a weekly basis and total days in jail (due to substance use).

Hypothesis 4 (H4): It was hypothesized that treatment would facilitate consistent attendance of treatment sessions focused on DBT skills, in addition to continued and stable attendance to the mandated substance abuse treatment groups offered by VBCDHD. These outcomes were assessed on a weekly basis for both treatment programs.

Hypothesis 5 (H5): It was hypothesized that participants who maintain regular session attendance and complete weekly homework assignments would demonstrate significantly greater improvement rates on the primary dependent variables, than those who did not attend sessions regularly or failed to complete weekly homework.

In addition to the stated hypotheses, there were additional ancillary treatment goals that were observed and monitored during this study. Factors of interest included monitoring levels of depression measured by the Beck Depression Inventory, severity of BPD features measured by the Zanarini Rating Scale for Borderline Personality Disorder, symptoms of alexithymia measured by the Toronto Alexithymia Scale – 20, and avoidance behaviors measured by the abbreviated COPE and the Acceptance and Action Questionnaire.
CHAPTER II

METHODS

Participants

Adult females (ages 20 – 49) were recruited from VBCDHD to participate in the treatment study. Eligible participants were women currently enrolled in an outpatient treatment program through VBCDHD for methamphetamine related problems. For some participants, participation in the substance abuse program was a stipulation of probation stemming from county-sanctioned sentencing, and therefore was mandated. Other participants were self-referred to the substance abuse treatment program, seeking therapy for various personal reasons. Each participant was given information about the treatment study during their current substance abuse treatment program (either through oral recruitment, Appendix A, or flyer handouts, Appendix B). This information emphasized the treatment protocol as an adjunct to their current treatment, which was designed to help them achieve and maintain abstinence and meet other personal treatment goals.

Criteria for inclusion in the study were 1) methamphetamine abuse or dependence within the past 12 months, as measured by the Structured Clinical Interview for the DSM-IV (SCID; First, Spitzer, Gibbon, & Williams, 1997) and 2) features of borderline personality disorder (BPD) as measured by a minimum of 6 (i.e., impulsivity which may be self-damaging, emotional regulation difficulties, poor or ineffective interpersonal relationships, or suicidal or self-mutilating behaviors) on the Zanarini Rating Scale for
Borderline Personality Disorder (ZAN-BPD; Zanarini, 2003). Exclusion criteria included reported or observed presence of an acute manic phase, psychosis, homicidal ideation, or severe suicidality. Also, individuals were excluded or delayed participation in the study if they had been taking medication for psychiatric reasons for either less than 1 month, or at a varying dosage during the past month. If a participant did not meet all inclusionary criteria, the student investigator provided a referral for other psychological services and offered to supply the service provider with a summary of the assessment results that the participant had completed.

Twelve individuals participated in the initial assessment for this study. Of these 12 individuals, one did not meet the above inclusion criteria for methamphetamine substance abuse or dependence within the past year; and two met criteria for the study but chose not to participate in the study after completing the second assessment session. The final participant sample consisted of 9 adult female participants who qualified based on inclusion criteria and began the treatment portion of the study. Four participants completed the treatment phase and follow up assessment, while five discontinued participation at different times during the course of treatment.

**Experimental Design**

Treatment effects were evaluated using a non-concurrent multiple baseline design across participants (Barlow & Hersen, 1984), where each individual participant served as her own control. For this multiple baseline design, a repeated assessment measures were gathered for each participant, across baseline (i.e., pretreatment), during the intervention, and then at post-treatment in order to evaluate meaningful change for each individual. The design involved observing and evaluating baseline performance of the same
assessment data for each participant. The intervention was introduced after baselines that varied in length across participants. As each set of repeated assessments changes when the intervention is applied for that individual, the effects can then be attributed to the intervention rather than other extraneous events. The use of a non-current multiple baseline was a design given the intervention used. Use of a withdrawal or reversal design would be impractical because new skills were being taught and implemented for each participant, which cannot be removed. Also, since timing of participant enrollment varied, we used a non-current design, which allowed the researcher to stagger each of the baseline measurements without having to begin each participant at the same time.

For this study, the non-concurrent multiple baseline was replicated, with three participants included in each experimental design. For each participant, the number of days for baseline assessment varied, noting that baselines for the first group were 3, 4, and 5 assessments respectively (i.e., 1st during the first assessment session, 2nd during the second assessment session, and the remaining 3rd or 4th or 5th were sent home with the participant to complete once every four days). Participants also received a reminder phone call every four days to prompt them to complete assessment measures for the next data point. Determination to begin the intervention phase with each participant was dictated by observing no significant change trends or variability in the data, based on visual inspection of the graphed data of the Global Severity Index score (GSI) on the Brief Symptom Inventory (BSI). Although this design is a non-concurrent multiple baseline, if a participant's baseline assessment was not stable, that is, there was either great variability or a decreasing trend in the GSI, the number of baseline assessments were extended until the trend became stable. Establishing a stable baseline was
imperative for this design, noting that if each baseline changes only when the intervention is applied for that individual, the effects can be attributed to the intervention. However, in order to prevent undue stress on participants, baseline data was not extended beyond 16 days of baseline assessment (beginning after assessment session 2) even if baseline assessment remained unstable. However, there were two situations in which a participant’s baseline was greatly extended (i.e., one had been admitted to an inpatient substance abuse unit for three weeks, and the other had extreme scheduling conflicts due to a new job schedule).

Procedures

Pretreatment Assessment. During the initial meeting with the student investigator, the study was explained in further detail and informed consent was obtained (Appendix C). Continued participation in the treatment study involved finishing the first assessment session and then returning for a second pre-treatment assessment session (60-120 minutes each). During the first assessment session participants were asked to sign a release for information (Appendix D) so that information could be passed from the student investigator to the VB/CDHD substance abuse director and vice-versa. Specifically, the student investigator disclosed to the director of the VB/CDHD program only that an individual had enrolled in the treatment study and had either terminated or completed services during the course of the protocol. The director released monthly results from each participant’s urinalysis, participant attendance for the substance abuse treatment program, and number of days the participant has spent in jail to the student investigator (60 days prior to enrollment in the study until the participant has completed or terminated
the protocol). After completion of these administrative tasks, participants proceeded with the assessment session.

First, each participant completed a screening interview (Appendix E) with the student investigator to determine eligibility for participation. This semi-structured interview assessed for current mania or psychotic symptoms according to DSM-IV-R criteria. This interview also provided a comprehensive evaluation of homicidal ideation and suicidality by asking a variety of questions based upon recommendations from Rudd and Joiner (1998). This interview was conducted at pretreatment only. Following the interview, the investigator classified the participant’s suicidal ideation as either non-existent, mild, moderate, or severe. Determination of classification was based on the following classification system:

**Non-existent**: no identifiable suicidal ideation

**Mild**: infrequent suicidal ideation which is largely historical and is of limited frequency, intensity, and duration, no identifiable/specific plan or no access to method of a loosely developed plan, good self-control (subjective or objective), no immediate intent (subjective or objective), and participant has no history of a suicide attempt.

**Moderate**: frequent recent suicidal ideation with limited intensity and duration, some specific plan with access, but good self-control (subjective or objective), no immediate intent (subjective or objective), and a history of a suicide attempt or instrumental suicide-related behavior is present.

**Severe**: frequent, intense, and enduring suicidal ideation, specific plan, evidence of impaired self-control (subjective or objective), and markers of intent present (choice of lethal method, method is accessible, some preparatory behavior, some expressed immediate intent, refusal to sign no suicide contract), and a history or more than one suicide attempt or repeated instrumental suicide-related behaviors.

Participants whose suicidality was classified as mild or moderate were admitted to the study after participants were willing to verbally commit to a no suicide contract and
other inclusionary/exclusionary criteria were met. No participant was classified as severe for level of suicidality.

Next, the following measures were administered over the remainder of assessment session one and a second assessment session in order to gather background information, determine inclusionary eligibility, and further assess additional substance-use information and various other psychological variables.

Demographic Questionnaire (Appendix E) The DQ consists of basic questions about the participant’s age, race, annual income, marital status, number of children, occupation and current use of psychotropic medications and/or current psychotherapy involvement. This self-report questionnaire was administered at pretreatment only.

Structured Clinical Interview for DSM-IV (SCID). The SCID is a highly structured, clinician-administered interview which was used to assess psychopathology according to the substance dependence and abuse categories of the DSM-IV-R. Only the module assessing substance use disorders was administered, in order to assess for current and historical substance abuse (i.e., including quantity, frequency, type of substance, duration of use, and duration of abstinence if applicable). The SCID is considered a reliable tool in assessing substance use disorders (First, Spitzer, Gibbon, & Williams, 1997). This interview was conducted at pretreatment, posttreatment and at the 3-month follow-up session.

Zanarini Rating Scale for Borderline Personality Disorder (ZAN-BPD). The ZAN-BPD consists of nine main categories or set of questions to assess the nine criteria for BPD according to DSM-IV-R criteria. This measure assesses the presence and severity of the symptoms of borderline personality disorder over the two weeks prior to
the interview (Zanarini, 2003). The interviewer rates the participants on the severity of symptoms on a 5 point anchored scale from 0-4, in order to have a continuous measure of symptom severity (0-36). In the only normative study published to date, the total score for those with BPD is $M=14.3$ ($SD=6.8$), as compared to matched persons without BPD $M=5.2$ ($SD=3.5$). The ZAN-BPD is considered useful in research for BPD because it has good internal consistency (0.85) and test-retest reliability was in the good to excellent range. ZAN-BPD has also been shown to have both good convergent validity and discriminant validity (Zanarini, 2003). This interview was conducted at pretreatment, posttreatment, and 1-month and 3-month follow-up sessions.

**Abbreviated COPE Inventory (Appendix E).** This is a 60 item measure, divided into 15 scales, assesses how individuals respond when confronted with difficult or stressful events (Carver, Scheier, & Weintraub, 1989). Individuals rate each item on a scale from 0-3. The abbreviated measure used in this study used 8 subscales for a total of 32 items. This measure assesses a broad range of coping responses, including active coping, substance use, avoidance, acceptance and problem solving. This self report measure was given at pretreatment assessment, continuous baseline and treatment assessment, in addition to posttreatment and both follow up sessions. This measure was condensed into two composite scores, including two positive subscales (restraint and positive coping) and two negative subscales (substance use and negative coping). The composite subscales were selected based on high inter-correlations among items (see Table 1 for the correlation matrix).
Table 1  
COPE Subscale Correlation Matrix Select

<table>
<thead>
<tr>
<th>Variable</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Positive reinterpretation &amp; growth</td>
<td>.812**</td>
<td>.944**</td>
<td>.704*</td>
<td>.561</td>
<td>- .816**</td>
<td>- .598</td>
<td>- .286</td>
</tr>
<tr>
<td>2. Active coping</td>
<td></td>
<td>.877**</td>
<td>.691*</td>
<td>.174</td>
<td>- .860**</td>
<td>- .798**</td>
<td>- .574</td>
</tr>
<tr>
<td>3. Acceptance</td>
<td></td>
<td></td>
<td>.795**</td>
<td>.556</td>
<td>- .891**</td>
<td>- .780**</td>
<td>- .305</td>
</tr>
<tr>
<td>4. Planning</td>
<td></td>
<td></td>
<td></td>
<td>.555</td>
<td>- .750*</td>
<td>- .859**</td>
<td>- .450</td>
</tr>
<tr>
<td>5. Restraint</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- .266</td>
<td>- .244</td>
<td>.295</td>
</tr>
<tr>
<td>6. Denial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.813**</td>
<td>.564</td>
</tr>
<tr>
<td>7. Behavioral disengagement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.572</td>
</tr>
<tr>
<td>8. Substance use</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: *p < .05 (2-tailed). **p < .01. (2-tailed).

**Brief Symptom Inventory (BSI).** This self-report measure consists of 53 items designed to assess overall psychological distress that a person has experienced in the past seven days. This measure has nine separate subscales that can be completed in a brief time frame (10 minutes). It demonstrates a high test-retest reliability across subscales and for the global severity index (.90), as well as good internal consistency (Derogatis, 1993). This self-report measure was given at pretreatment, continuous baseline and treatment assessment, and posttreatment and follow up sessions.

**Beck Depression Inventory (BDI-II).** The BDI consists of 21 items designed to assess the presence and severity of symptoms of depression over the two weeks prior to the session meeting (Beck, Steer, & Brown, 1996). The BDI-II uses a four-point Likert-type scale, ranging from 0 to 3, to measure the participant’s depressive symptomatology.
The total score for the BDI-II is found by summing the ratings for each of the 21 items, while guidelines for scores on this measure suggest that 0-13 falls in minimal depression range, 14-19 mild depression, 20-28 moderate depression, and 29-63 severe depression. The BDI is considered useful in assessing depression in research because it has high internal reliability (Dozois, Dobson & Ahnberg 1998) and good construct validity (Steer, Ball, Ranieri & Beck 1997). This assessment was administered at pretreatment, posttreatment and follow up assessment sessions.

Substance Abuse Risk Response Test Situations (SARRTS: Appendix E). This 5-item self-report measure was adapted from the cocaine risk response test (Carroll, 1999). This measure asks the respondent to state how she would cope with a tempting situation to use substances. The response is rated on six independent variables, such as latency to response, number of coping plans, specificity of her response and type of response. This verbal interview was given at pretreatment, posttreatment, and follow up sessions.

Drug Use Functional Assessment Screening Tool (DUFAST: Appendix E). The DUFAST is a 75-item self-report measure designed to assess current function of substance use (Cole & Bonem, 1998). Items are responded to on a 7-point Likert-type scale (never to always) indicating how often each listed experience or situation (e.g., thoughts, feelings, or behaviors that proceed or follow substance use) is related to a respondent's substance use. Participants are asked to complete the entire DUFAST specific to drug and alcohol use to allow the researchers to gain a better understanding of underlying function of using substances.

Drug Use Questionnaire (DAST-20). This 20 item self-report measure assesses behaviors and outcomes associated with using substances over the past year on a
dichotomous rating (i.e., yes or no). Scores range from 0 to 28, with higher scores indicating greater drug involvement and problem severity. Measures of internal consistency, factorial validity, and concurrent validity are excellent (Skinner, 1982). This self-report measure was given at pretreatment, posttreatment and follow up sessions, with an adapted time frame (i.e., since you have started the current treatment study) used for posttreatment and follow up sessions.

*Emotion Regulation Questionnaire (ERQ; Appendix E).* This 10-item self-report measure assesses ways that individuals try to regulate both positive and negative emotions based on a 7-point response scale. This measure has shown to demonstrate fairly good discriminant and convergent reliability (Gross & John, 2003). This self-report measure was given at pretreatment, posttreatment, and follow up sessions.

*Toronto Alexithymia Scale (TAS-20; Appendix E).* This self-report measure consists of 20 items, which is designed to assess the level of alexithymic characteristics on a five-point scale on three separate subscales (i.e., difficulty identifying emotions, difficulty describing emotions and externally oriented thinking). Alexithymia is indicated by a score on the TAS – 20 of 61 or above, and non-alexithymia is indicated with a score of 51 or below, with the remaining area considered some alexithymia characteristics present (Bagby et al., 1994b). This measure has good internal consistency (0.81), test-retest reliability (0.77) and convergent and discriminant validity (Bagby, Taylor, & Parker, 1994a; Bagby, Taylor, & Parker, 1994b). This self-report measure was given at pretreatment, posttreatment, and follow up sessions.

*The Kentucky Inventory of Mindfulness Skills (KIMS; Appendix E).* This 39-item self-report measure assesses the use of mindfulness skills, as taught by dialectical
behavior therapy. It also has four unique subscales that load on specific mindfulness skills (i.e., observe, describe, act with awareness, accept without judgment). Preliminary studies demonstrate some notable differences between student samples and those with BPD on 3 of the 4 subscales. This measure has shown high content validity and high internal consistency, as well as adequate to good test-retest reliability (Baer, Smith & Allen; 2004). This self-report measure was given at pretreatment, posttreatment, and follow up sessions.

**Acceptance and Action Questionnaire (AAQ; Appendix E).** This self-report assessment consists of 9 items and is designed to assess an individual’s level of experiential avoidance. Specifically, the items assess how a person responds to a negative situation (Hayes et al., 2004). Preliminary data suggest that clinical samples of females have a mean score of 43.0, where as non-clinical samples of females have a mean score of 38.0. Also, preliminary data suggest that females with BPD score slightly higher than clinical samples (45.6). This self-report measure was administered at pretreatment, posttreatment, and follow-up sessions.

**Additional Measures.** The following assessment measures were also utilized over the course of this treatment protocol.

**Diary Card (Appendix F).** This form was used to assess the participant’s daily self-reported activity level for skills practice and target behaviors (i.e., substance use, urge to use, mood ratings, suicidal ideation, etc.) relevant to goals for treatment. This material was adapted from Linehan’s skills training manual (1993b). This assessment card was completed by participants on a daily basis during pretreatment assessment, and
over the course of twelve treatment sessions, and was reviewed by the therapist during each session.

**Therapist Adherence Form (Appendix G).** A 20-item measure of treatment compliance was completed by the therapist immediately following each session. A trained graduate research assistant then completed the same form to review 22% of all sessions for treatment integrity, rating the session using a 7-point scale on components of treatment (some general behavioral psychotherapy and others areas that are related to DBT that should have been occurring for all or some sessions). This measure also included items to rate participants on session participation, completion of homework, and other treatment related components.

**Client Satisfaction Questionnaire (CSQ, Appendix H).** The CSQ measures client satisfaction with treatment, with higher scores indicating more satisfaction (Larsen, Attkisson, Hargreaves, & Nguyen, 1979). The CSQ offers additional information about how acceptable this treatment has been to the participant. Kazdin, French, and Sherick (1981) reported that acceptability is an important dimension of treatment selection because acceptability can influence treatment strength. This self report measure was only administered at posttreatment assessment.

At the end of each session, participants were also given either a gas card for transportation reimbursement ($5) or a free ride arranged with the public transportation system, in addition to a gift card to local merchants for her time in participation ($20 per assessment session, $5 per treatment session). The participants were reimbursed for each of these areas during each assessment and treatment session.
If the participant met inclusionary criteria, she was asked to continue with assessment, by completing 1 to 4 more sets of the short self-report assessment measures (the BSI, abbreviated COPE and the daily diary card, which took 10-15 minutes on each occasion) over the baseline phase. The participant was given the set(s) of assessment instruments to take home, with instructions to complete one set of the measures (BSI and the COPE, together in one envelope) in four days, then to complete the next set of measures, if applicable, in eight days, with this process repeating itself up to 4 sets of assessment and 16 days up to initiation of treatment. The student investigator contacted participants during the week to remind them to complete the appropriate number of measure sets every four days, in addition to the daily diary card, which was returned to the Van Buren / Cass Health Department offices upon their next visit. The student investigator collected measures periodically and contacted participants to schedule the initial treatment session.

Treatment. Four participants completed twelve individual treatment sessions with the student investigator (Treatment Manual, see Appendix I). At the end of each treatment session participants completed the BSI and COPE inventory, in order to assess weekly progress. Additional assessments, including number of missed DBT treatment sessions, self reported substance use, suicidal ideation, urges to use substances, urges to engage in self harm behaviors, completed self harm behaviors, practice of new skills and completed homework, were monitored by the participant's diary card (Appendix F) on a daily basis by the participant and discussed weekly with the therapist. Additional assessment information was also provided by VB/CCDHD to the student investigator on
a weekly basis (i.e., urinalyses results, attendance of substance abuse treatment sessions, and probation violation or jail time).

Each treatment session was 90 minutes long, with an additional 10-15 minutes after the session for participants to complete assessment measures (the abbreviated version of the COPE inventory and the BSI), over the course of 12-14 weeks. The treatment protocol is based on the Dialectical Behavior Therapy (DBT) model developed by Linehan (1993a, 1993b), which utilizes both group skills training sessions (to learn several new coping and effectiveness skills) and individual sessions (to focus on individual behavior targets and goals, and to promote generalization of skills) for a minimum of 12 months. The current treatment protocol abbreviates the skills training lessons, and combines overall DBT aspects into 12 individual sessions in order to determine if an abbreviated version of DBT treatment can be effective in some areas of interest.

Individual treatment sessions focused on teaching and practicing DBT skills (Linehan 1993b; i.e., core mindfulness, distress tolerance and emotion regulation,) in a dialectical or balanced manner, as well as additional modified DBT skills (Dimeff, Rizvi, Brown & Linehan, 2000; Appendix J) that were tailored to meet individualized needs of a substance use population. The interpersonal effectiveness module was omitted from this protocol due to time limitations and the fact that the most significant empirical outcomes that have emerged from previous research with DBT seem to have been most impacted by the other three treatment modules. In the event that ongoing interpersonal difficulties were occurring for participants, they would be addressed within the context of core mindfulness, distress tolerance or emotion regulation.
Each session had a very similar format with clear and forthright objectives for each meeting. Overall, each session focused on reviewing the previous week's homework (i.e., skill homework and weekly diary card), teaching or reviewing a skill module, incorporating practice of new skills into session, assessing the participant's values-based behaviors and assigning homework to develop skill generalization. Each of the three skill modules (including adapted concepts for substance abuse) was covered in three sessions, over the course of nine sessions. Then each skill was reviewed, one topic per session, for the last three treatment sessions.

During the first treatment session, variations to this protocol included a discussion of the therapist's role in therapy, providing psychoeducation about the therapy, offering clarification about treatment or expectations, and building the therapeutic relationship. The first and second session also consisted of an in-depth discussion of personal goals, building a life worth living, and how these aspects can impact one's life and help alter behavior change. During the first session, the diary card tracking sheet (Appendix F; used over the course of treatment) was explained and discussed with examples.

The final sessions incorporated reflections of progress made in therapy, ways to maintain changes, additional areas to focus on in therapy, and current thoughts about termination of services. Throughout all the sessions, there was an emphasis on therapist-participant cooperation and collaboration, noting that the participant plays the primary role in deciding what is important for her, based on her stated goals. Additionally, there was a continuous focus on incorporating newly learned coping skills that will ultimately facilitate functional and healthy coping alternatives to using substances, in addition to a focus on dialectics in every session (e.g., acceptance of the participant as she currently is
and changes the participant wants to initiate in her life, noting that she is currently doing the best she can do).

*Treatment Adherence.* To ensure treatment fidelity, the therapist role-played each session with a fellow graduate student or undergraduate RA prior to it being conducted for the first time with the first participant. The therapist also completed a 20-item measure of treatment compliance immediately following each session (Therapist Adherence Form; Appendix G). As an integrity check, all of the sessions were audio-taped and 22% were randomly selected for listening and rating by a trained observer. The trained observers listened to the 22% of randomly selected session tapes and provided a rating of the therapist’s adherence to the treatment protocol and overall interaction with the participant.

Observer ratings were calculated by collapsing the 7-point therapist rating scale and 5-point participant rating scale into dichotomous variables (i.e., this did, or did not occur in the therapy session) for improved clarity. For therapist items, a score of 0 or 1 was coded as a non-occurrence, while a score of 2 through 6 was coded as an occurrence. For participant rated items, a score of 0 was coded as a non-occurrence, while a score of 1-4 was coded as an occurrence. Based on observer ratings, there was a 96.0 percent agreement rate overall for therapist adherence to the designated protocol, and 83.3 percent agreement on participant related variables. For each specific item, there was variability in percentage of agreement, which ranged from 100.0 to 77.8 percent, and one client variable that only yielded 55.6 percent agreement (see Table 2).
Table 2

Therapist Adherence Ratings per Rated Item

<table>
<thead>
<tr>
<th>Item Question</th>
<th>Occurrence Rates</th>
<th></th>
<th>Non-Occurrence Rates</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agree</td>
<td>Disagree</td>
<td>% Agr</td>
<td>Agree</td>
<td>Disagree</td>
</tr>
<tr>
<td>1. Setting and following an agenda</td>
<td>18</td>
<td>0</td>
<td>100.0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2. DBT skill modules</td>
<td>18</td>
<td>0</td>
<td>100.0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3. Building a life worth living</td>
<td>18</td>
<td>0</td>
<td>100.0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4. Applicable homework</td>
<td>18</td>
<td>0</td>
<td>100.0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5. Understanding of participant</td>
<td>18</td>
<td>0</td>
<td>100.0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6. Use of dialectics</td>
<td>18</td>
<td>0</td>
<td>100.0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7. Feedback to the participant</td>
<td>18</td>
<td>0</td>
<td>100.0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>8. Functional analysis of participant activity</td>
<td>12</td>
<td>5</td>
<td>70.6</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>9. Outcomes of alternative behaviors</td>
<td>16</td>
<td>2</td>
<td>88.9</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>10. Participant target behaviors</td>
<td>17</td>
<td>1</td>
<td>94.4</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>11. Homework completed*</td>
<td>14</td>
<td>4</td>
<td>77.8</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>12. Thoroughness of homework*</td>
<td>15</td>
<td>3</td>
<td>83.3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>13. Client pursuit of goals*</td>
<td>16</td>
<td>2</td>
<td>88.9</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>14. Client understanding of homework*</td>
<td>17</td>
<td>1</td>
<td>94.4</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>15. Extent of client engagement*</td>
<td>18</td>
<td>0</td>
<td>100.0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>16. Difficulty to work with client*</td>
<td>5</td>
<td>8</td>
<td>38.5</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>17. Overall clinician effectiveness</td>
<td>18</td>
<td>0</td>
<td>100.0</td>
<td>(scale of 0 – 6)</td>
<td>$M = 5.4$</td>
</tr>
</tbody>
</table>

NOTE: All items from the Therapist Adherence Form. * Indicates a 0-4 rating scale.

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There are a few considerations that should be discussed when interpreting the agreement rates across items on the adherence measure. First, most ratings of therapist behaviors had high rates of agreement. These reliable items included common factors that often take place in therapy sessions (i.e., setting an agenda, feedback for client, assigning meaningful homework). However, other factors may not be as common in every therapy session (i.e., functional analysis of activity; 70% agreement), which may have led to difficulty identifying this factor during sessions. Also, the increased variability in agreement for items assessing participant related factors may be explained by differences in the amount of exposure raters had to the participant. The therapist’s ratings may reflect their working relationship with participants over time, while coders had access only to a single session. This varying degree of exposure especially may have impacted variables that were more subjective in nature (i.e., How difficult do you feel this client was to work with in session? 55.6% agreement rate overall) or also could be explained by the varying clinical experiences of the raters (i.e., limited exposure to clients with complex symptom presentations).

**Posttreatment Assessment.** The post treatment and follow-up assessment sessions (1 and 3 month) included the same assessment battery that was administered at pretreatment assessment. The participants completed the abbreviated COPE, BSI, SCID (substance abuse and dependence section), ZAN-BPD, BDI, ERQ, TAS-20, KIMS, DAST-20, AAQ, and the Client Satisfaction Questionnaire (CSQ; Appendix H).
CHAPTER III

RESULTS

There was a heavy reliance on single-subject methodology and a within-subject approach to assess clinically significant change for each of the hypothesized outcomes. Although this research was designed to employ a non-concurrent multiple baseline (i.e., 3 groups of 3 participants each), these groups were not intact at the completion of this project due to attrition rates. Therefore, each participant was treated as a single-case AB design, within a non-concurrent multiple baseline, where not all participants completed the entire protocol. Repeated measures were taken at baseline (prior to treatment), throughout the course of treatment, at the end of treatment, and at 1-month and 3-month follow-up. Other lengthier measures were administered only at pretreatment, post-treatment, and follow-up (1 and 3 month). Each participant’s background and course of treatment is described in detail, including participants who had completed treatment (described first), and a second group who terminated therapy prematurely during the course of treatment. Each hypothesis is then discussed for all data collected, including variation with treatment completers and non-completers. Also, paired t-tests were conducted to provide a preliminary exploration of trends at the group level for hypothesized outcome measures.
Participant Results

_Treatment completer 1 (CI):_ The participant was a 49-year-old divorced, Caucasian female. At the time of assessment she was employed part-time as a waitress. According to her self report, she had not used methamphetamine in six months at the time of the initial assessment. She met criteria for methamphetamine dependence within the past year. CI reported a 14 year history of methamphetamine use, during which she would use about 1 gram daily. She reported two brief periods (of a few months) of abstinence during that time frame. She also met criteria for alcohol abuse in the past year and had some difficulties during the past year with other illicit substances (i.e., marijuana). Due to her intense substance use, CI reported that she had spent several months in jail and was convicted of a felony due to possession and sale of methamphetamine. She also noted that she and her husband divorced a few years ago after a very turbulent relationship, and that her relationship with her two adult children has been strained for several years. CI also reported that she experiences much guilt about her youngest adult son, with whom she used to use substances on a daily basis. Six months prior to participating in this study, CI had been court mandated to attend the New Directions (ND) program through VBCDHD, which met once per week in a group format to address substance related difficulties. She had been receiving psychopharmacological treatment for 3 months prior to enrolling in this study, but had discontinued use a week prior to the initial assessment. She expressed a strong desire to participate in the treatment study, and was scheduled to begin the study (assessment and treatment) after a four week wash-out time frame had elapsed.
Course of treatment. C1 began treatment after a 2-week baseline and completed the BSI and COPE on five separate occasions (including during the second assessment session). In addition to the general goals of treatment applicable to this participant (i.e., maintain abstinence, manage unstable emotions, decrease cognitive dysregulation, and increase positive coping behaviors), this participant identified additional aspirations for therapy (i.e., to find who she is or find a sense of purpose in her life, reduce her guilt related to her son’s substance abuse, be a positive role model for her youngest son, and improve relationships with other family members). C1 was consistently on time and present for weekly sessions, except for a 3-week time span due to severe illness. She was almost always thoroughly engaged in session, and was compliant and diligent with homework that was related to acquiring and implementing (between sessions) new mindfulness, emotion regulation and distress tolerance skills as they applied to her personal goals and stated values. These observations were recorded by the therapist on the Therapist Adherence form. The items are scored on a 5-point scale from 0 (not at all) to 4 (completely). C1 received an average rating of 3.33 (SD = .98) for how much homework, and 3.33 (SD = .78) for how thoroughly homework was completed. She also received an average rating of 3.08 (SD = 1.0) for how active she had been in pursuing treatment goals and 3.58 (SD = .51) for the extent to which she understood the assigned homework. She was usually “mostly to completely engaged” in session (3.75, SD = .49) and was rated as “not at all difficult to work with” (0.0, SD = 0.0).

In session 6, the participant reported that she was experiencing several noteworthy changes in her affect and in interpersonal relationships. She also proudly stated she received feedback from significant individuals in her life that they had noticed positive
changes in her behavior during the past few weeks (i.e., more pleasant, calm, relaxed). In
the final four sessions, each skill group was reviewed and maintenance of acquired
changes were discussed. C1 reported several difficult events with her family members
where she had utilized several new skills that she had acquired, noting that just a few
months ago she would have “lost it and probably drank or gotten high”. She also reported
that she felt very confident in her ability to maintain changes and was excited to be
“moving on in her life” in such a positive direction. Posttreatment assessment occurred 3
days after treatment and follow-up assessment occurred at 1 and 3 months, respectively,
after treatment.

_Treatment completer 2 (C2)._ The participant was a 34-year-old divorced,
Caucasian female. At the time of assessment, she was employed part-time as cleaning
personnel for office buildings. According to her self report at assessment, she had not
used methamphetamine in eight months, and had a 6 ½ year history of use. During her
history of use, she had used about .5 grams everyday and attempted to quit several times;
twice maintaining periods of abstinence while incarcerated. C2 met criteria for
methamphetamine dependence within the last year, in addition to meeting criteria for
alcohol abuse several years ago. Due to her substance use, C2 reported that she had spent
several months in jail and has a felony on her record for possession and manufacturing
methamphetamine. She also noted that she and her husband had divorced a few years
ago. Six months prior to participating in this study, C2 had been court mandated to serve
jail time and attend the ND program through VBCCDHD, which met once per week in a
group format to address substance related difficulties. This was her second time being
mandated to attend this program. C2 was not taking any medication at initial assessment or during the course of treatment.

**Course of treatment.** C2 began treatment after a 1-week baseline, completing the BSI and COPE on three separate occasions (including during the first and second assessment session). In addition to the general goals of treatment (i.e., maintain abstinence, manage unstable emotions, and decrease cognitive dysregulation), this participant identified additional goals for treatment (i.e., manage stress and frustration levels, decrease daily worry thoughts, manage urges to use, be more independent so not to be involved with “unhealthy males” and improve family relationships). C2 was consistently on time and present for weekly sessions, typically presenting in an enthusiastic and engaged manner. She was compliant and diligent with homework related to acquiring and implementing (between sessions) new mindfulness, emotion regulation and distress tolerance skills as they applied to her personal goals and values. These observations were recorded by the therapist following sessions on the Therapist Adherence form. The items are scored on a 5-point scale from 0 (not at all) to 4 (completely). C2 received an average rating of 3.75 (SD = .62) for how much homework she completed and an average rating of 3.58 (SD = .67) for how thoroughly the homework was completed. She also received an average rating of 3.92 (SD = .29) for how active she had been in pursuing treatment goals and 3.75 (SD = .45) for the extent to which she understood the assigned homework. She was usually “mostly to completely engaged” in session (3.92, SD = .29) and was rated as “not at all difficult to work with” (0.0, SD = 0.0).
In session 5, the participant reported that she was experiencing several positive changes in how she was able to manage her affect (i.e., chronic worry thoughts and irritation). She was able to identify relevant patterns in her behavior and ways to reduce or be tolerant of her anxieties. In session 8, she also stated that a friend who had known her for over 10 years observed that C2 has been “like a whole new person” and that he could not wait “to see what (she’s) going to turn out like”. This participant also applied her newly acquired DBT skills to quit smoking (after 17 years of use) during the course of treatment, which she expressed much excitement over. In the final sessions, each skill group was reviewed, and maintenance of positive changes was discussed. C2 stated she felt “very proud” of herself for completing the treatment and making some “real changes” in her life that would “really last”. She also stated she was very confident in herself to maintain her current progress. Posttreatment assessment occurred 1 week after treatment and follow-up assessment occurred at 1 and 3 months, respectively, after treatment.

_Treatment completer 3 (C3)._ The participant was a 41-year-old divorced, Caucasian female. According to her self report, she had not used methamphetamine in eight months at the time of assessment. She met criteria for methamphetamine dependence within the last year and reported a 5½ year history of use. During this time, reported that she would use 2-3 grams several days a week and had tried, unsuccessfully, to quit several times. Due to her intense substance use, C3 reported that she had spent several months in jail and has a felony on her record. She also noted that her husband filed divorce paperwork in the past year and her relationship with her adult child has been strained. She was employed full-time at a fast-food restaurant. Six months prior to participating in this study, C3 had been court mandated to attend the ND program.
through VBCCDHD, which met once per week in a group format to address substance related difficulties. She also was receiving psychopharmacological treatment for 2½ months prior to enrolling in this study and was stabilized on Effexor (150 mg.) and Depakote (1750mg) at assessment and through session 10 of treatment. At session 10, C3 noted that during an appointment with her psychiatrist, they had decided to titrate her level of Depakote the following week due to several adverse side effects. Over the next week she completely discontinued Depakote and began taking 20mg of Ambilify by treatment session 11. This medication was increased to 50mg by session 12, and she maintained this medication regimen through the 1-month follow-up assessment.

Approximately 4 weeks later, the participant lost her medical benefits through the county and no longer was able to obtain any type of medication, including psychotropics. At the time of the 3-month assessment, which occurred at 4 ½ months post-treatment, the participant had not been taking medication for over 2 months and was highly distressed about her current medical situation.

Course of treatment. C3 began treatment after a 1-week baseline after completing the BSI and COPE on three separate occasions. In addition to the general goals of treatment (i.e., maintain abstinence, manage unstable emotions, decrease cognitive dysregulation, and increase positive coping skills), this participant identified additional goals for treatment (i.e., improve her relationship with ex-husband by being honest and caring towards him, cope better with her ex-husband’s behavior, be more independent, and feel better about herself or proud of herself). C3 was consistently on time and present for weekly sessions, and was very determined to learn new skills, although completing homework and trying new skills outside of session was at times difficult for her.
However, she continually made efforts at improving and building coping skills. These observations were reported by the therapist following sessions on the Therapist Adherence form. The items are scored on a 5-point scale from 0 (not at all) to 4 (completely). C3 received an average rating of 3.08 (SD = 1.24) for how much homework she completed and an average rating of 2.92 (SD = 1.00) for how thoroughly the homework was completed. She also received an average rating of 3.08 (SD = 1.16) for how active she had been in pursuing treatment goals and 3.25 (SD = 1.14) for the extent to which she understood the assigned homework. She was usually “mostly engaged” in session (3.25, SD = .62) and was rated as “a little to not at all difficult to work with” (0.33, SD = 0.49).

By mid-treatment, the participant reported that she was experiencing some positive changes in managing her affect and improving how she felt about herself (i.e., by judging her own behaviors as they are consistent with building a life worth living, regardless of others’ responses), although this was an area that she continued to work on throughout the course of treatment. C3 also reported that she was able to cope much better with her husband’s undesirable behaviors, even though they still evoked much frustration for her. She was able to further understand that she could act in ways that did not make the situation worse, even though she was still unhappy with his actions. In the final sessions, each skill group was reviewed and maintenance of positive changes was discussed, in addition to areas in which the participant was still struggling. The participant noted that she was “feeling the effects” of her medication change and reported more intense feelings of sadness, despite trying different skills to cope with the situation. C3 also stated she felt quite sad that therapy was ending, but proud that she put in so
much effort to finish. She declined additional referrals for therapy, noting that she was continuing to see her individual substance abuse worker. C3 was able to verbally discuss ways to manage her sudden increase of distress and felt “mostly confident” that she would continue to use what she has learned, noting that she was using most of the skills everyday now. Posttreatment assessment occurred four days after treatment and follow-up assessment occurred at 1 month and 4½ months, after treatment.

Treatment completer 4 (C4). The participant was a 31-year-old single, Caucasian female, who was living with her partner. She has never been married and has one child (age 11). At the time of assessment she was self-employed by running a small greenhouse and a hobby farm. According to her self report, she had not used methamphetamine in 3½ months at the time of assessment, and had a 10 year history of use. She met criteria for methamphetamine dependence in the past year, reporting that she typically used .25 grams everyday. She reported that had never been successful in quitting until begin incarcerated 3 months ago. C4 also met criteria for polysubstance dependence in the past year (i.e., marijuana). Due to her intense substance use, C4 reported that she had spent 2.5 months in jail and has a felony on her record for possession and manufacturing methamphetamine. She also noted that her relationship with her partner and young child (age 11) has been very strained. Two months prior to participating in this study, C4 had been court mandated to attend the ND program through VBCCDHD, which met once per week in a group format to address substance related difficulties. C4 had been receiving psychopharmacological treatment for 1 month prior to enrolling in this study and was stabilized on fluoxetine (20 mg) and amitriptyline (10 mg) at assessment and through the duration of treatment.
Course of treatment. C4 began treatment after a 2 ½ week baseline, after completing the BSI and COPE on five separate occasions. In addition to the general goals of treatment (i.e., maintain abstinence, manage unstable emotions, decrease cognitive dysregulation, and increase positive coping skills), this participant identified additional goals (i.e., following through on therapy, activities and goals; reducing intense anger outbursts; finding a sense of purpose in her life; increasing her social network and improving her relationship with partner and other family by being loving, caring and supportive). C4 was consistently on time and present for weekly sessions, and was also very determined and quick to learn new coping skills. She regularly completed homework and tried new skills outside of session, with notable positive effects in managing her emotions in difficult situations by session 4. These observations were also recorded by the therapist on the weekly Therapist Adherence forms. The items are scored on a 5-point scale from 0 (not at all) to 4 (completely). C4 received an average rating of 3.50 (SD = .52) for how much homework she completed and an average rating of 3.50 (SD = .52) for how thoroughly the homework was completed. She also received an average rating of 3.58 (SD = 1.16) for how active she had been in pursuing treatment goals and 3.08 (SD = 1.08) for the extent to which she understood the assigned homework. She was usually “completely engaged” in session (4.0, SD = .0) and was rated as “a little to not at all difficult to work with” (0.08, SD = .29).

At mid-treatment, the participant reported that she was experiencing several positive changes in managing her affect, especially related to daily interactions with her partner and his critical or negative comments. C4 endured several stressful family situations during treatment, in which others relied on her for support and instrumental
needs. She reported that she was able to “be there for family when they needed (her) for the first time in years” and was very proud of herself. In the final sessions, each skill group was reviewed and maintenance of positive changes was discussed. C4 stated she felt ready to terminate therapy at session 9, noting that “I really got this stuff and it’s really working”, but did agree to complete the remaining treatment sessions. She also stated she was very confident in herself to maintain treatment gains. Posttreatment assessment occurred 6 days after treatment and follow-up assessment occurred at 1 and 3 months, respectively, after treatment.

_Treatment non-completer 1 (N1)._ The participant was a 34-year-old divorced, Caucasian female. At the time of initial assessment, the participant was living with her mother and was unemployed. According to her self report, she had not used methamphetamine in two months prior to the enrollment in this study. She reported a 2 year history of use, during which she used about 1 gram every other day, and met criteria for methamphetamine dependence. She also reported no current or past use of alcohol or other illicit substances. Due to her intense substance use, N1 reported that her husband had divorced her in the past year and that she had lost custody of her two children (ages 9 and 10). She was currently seeing them every two weeks with supervised visitation. N1 also noted that most of her family relationships were strained or severed due to her use. She reported that she previously was employed in an administrative position, but had lost her job several months ago. A month prior to participating in this study, N1 self-referred and enrolled in Intensive Outpatient Psychotherapy (IOP) through Van Buren / Cass County District Health Department (VBCCDHD) which met three times per week in a group format to address substance related difficulties. She also had been receiving
psychopharmacological treatment for 4 months prior to her initial assessment for this study. At the time of the initial assessment, and for the duration of the treatment, she was stabilized on Prozac (40 mg).

Course of treatment. N1 began treatment after a 1 week baseline, completing the BSI and COPE on three separate occasions. In addition to the general goals of treatment (i.e., maintain abstinence, manage unstable emotions, decrease cognitive dysregulation, and increase positive coping skills), this participant identified additional goals (i.e., increase her self-esteem and feeling good about choices she makes in her life, decrease her level of daily and chronic worry, and repair and improve trust in relationships with family members). N1 completed two treatment sessions, which took place 3 weeks apart, due to one participant cancellation and one no-show for session. During the second session, she reported using the initial mindfulness skills and demonstrated good understanding of the material. However, over the next several weeks she failed to attend four scheduled sessions and cancelled an additional 4 times, despite stating repeatedly that she “really wanted to seek treatment”. During this time she also discontinued services with VBCCDHD. The participant was then sent a letter indicating that she would no longer be able to participant in the treatment study unless she made and attended an appointment, which she did not. The Therapist Adherence form from two treatment sessions for N1 indicated an average rating of 3.00 (SD = 1.41) for how much homework she completed and an average rating of 3.00 (SD = .0) for how thoroughly the homework was completed. She also received an average rating of 3.50 (SD = .71) for how active she had been in pursuing treatment goals and 3.50 (SD = .71) for the extent to which she understood the assigned homework. She was usually “completely engaged” in session
(4.00 SD = .0) and was rated as "a little to not at all difficult to work with" (.50, SD = .71) when in session.

_Treatment non-completer 2 (N2)._ The participant was a 36-year-old divorced, Caucasian female with two children. At the time of enrolling in the study she was employed part-time as a waitress and living by herself. According to her self report, she had not used methamphetamine in eleven months at the time of enrollment, and had a six month history of use. During this time, she reported using about 1 gram every other day, and met criteria for methamphetamine dependence. She also met criteria for alcohol dependence in the past year and reported that it had been 6 weeks since her last drink. Due to her intense substance use, N2 reported that she and her husband had divorced, she lost custody of her youngest daughter (age 9) and her relationship with her adult child has been strained. One month prior to participating in this study, N2 self referred to attend individual sessions with a counselor through VBCCDHD on a bi-weekly basis to address substance related difficulties. At the time of initial assessment and through the duration of this study N2 was not taking any medication.

_Course of treatment._ N2 began treatment after a 2 week baseline, completing the BSI and COPE on four separate occasions. In addition to the general goals of treatment (i.e., maintain abstinence, reduce urges, manage unstable emotions, decrease cognitive dysregulation, and increase positive coping skills), this participant identified additional goals (i.e., improve her relationship with her mom; avoid disappointing and hurting family members; improve relationships with her daughters by being respectful, caring, and present for them; and feel good about herself and the choices she makes in her life). N2 completed nine treatment sessions over the course of 3 months. Between treatment
sessions 2 and 3 there was a 5-week lapse, during which the participant had cancelled a session and was not returning phone calls. During this time she also discontinued services with VBCCDHD. However, after changes in location of sessions, which was more convenient for her, she continued with therapy. She reported that she had relapsed with alcohol on 2 occasions during the 5-week lapse, however stated that she was very determined to “get back on track” and was able to see improvements in her own behavior (i.e., returning to therapy and not continuing to drink for several days once she had relapsed). Over the next 4 sessions N2 made notable improvements in her relationships, mood instability and anger, by implementing mindfulness and emotion regulation skills. She also indicated that her family members and co-workers were noticing and commenting on positive changes they were noticing. She also reported excellent skill use of dealing with a co-worker, in which she explained that she “would have just smacked her and told her off a few weeks ago”. After treatment session 9, the participant had cancelled 3 sessions for various reasons, then stopped returning phone calls after a serious domestic violence incident with her partner occurred, which included substance use and a hospital admission for injuries. After multiple attempts to initiate contact, the participant was sent a letter, to which she did not respond, at which point her therapy file was closed.

The Therapist Adherence form was completed for all nine therapy sessions for N2. The TAF indicated an average rating of 3.33 (SD = 1.00) for how much homework she completed and an average rating of 3.11 (SD = .93) for how thoroughly the homework was completed. She also received an average rating of 3.44 (SD = 1.33) for how active she had been in pursuing treatment goals and 3.56 (SD = .53) for the extent to
which she understood the assigned homework. She was usually “mostly to completely engaged” in session (3.89, SD = .33) and was rated as “a little to not at all difficult to work with” (.22, SD = .44) when in session.

_Treatment non-completer 3 (N3)._ The participant was a 22-year-old single, Caucasian female, who was unemployed at the time of the initial assessment. According to her self-report, she had not used methamphetamine in 2 weeks at the time of enrollment, and had a 9 year history of use. During this time frame she reported using about 2 grams everyday, and met criteria for methamphetamine dependence. She also met criteria for alcohol abuse in the past year and had difficulties during the past several years with other illicit substances (i.e., cocaine, marijuana, and other hallucinogens). Due to her intense substance use, N3 reported that she had spent time in residential, inpatient and outpatient substance abuse recovery programs since she had been 15. She also noted that she had lost custody of her 4 year old child to the father, and reported distress about having limited supervised visitation. Two months prior to participating in this study, N3 was self-referred to the IOP program through VBCCDHD, which met several times per week in a group format to address substance related difficulties. N3 was not taking any medication at initial assessment or during treatment.

_Course of treatment._ N3 began treatment after a 5 week baseline, completing the BSI and COPE on eight separate occasions (six while she was attending a 30-day inpatient treatment facility for substance use problems). In addition to the general goals of treatment (i.e., achieve and maintain abstinence, reduce urges, manage unstable emotions, decrease cognitive dysregulation, and increase positive coping skills), this participant identified additional goals for treatment (i.e., reduce impulsiveness related to
substance use and sexual affairs, reduce daily levels of frustration and anger, make more thoughtful choices and have confidence in choices she makes, let go of past hurt, and earn respect for herself). N3 completed seven treatment sessions over the course of 6 weeks. During that time she consistently was on time and present for sessions, and was consistently trying to implement new behaviors between sessions, related to skills and her personal values. After sessions 4 and 5, N3 noted that she was beginning to make improvements on reduced impulsiveness, frustration, and anger. She also had noticed positive changes in relationships with her family and intimate partner.

After completing session 7, N3 cancelled the next two appointments. Via phone she disclosed to the therapist that she had relapsed, engaging in “a 3-day binge on cocaine” and she was feeling very disappointed in herself. She disclosed she was very worried that the therapist would also be disappointed, and also stated she no longer had a place to live (due to her relapse). Despite reassurance from the therapist about their relationship and a clear recommendation to return to treatment in order to problem solve the situation, N3 failed to attend two scheduled sessions and subsequently enrolled in a year-long residential substance abuse program. Despite several attempts to arrange for a final session to promote closure, the participant’s current living and treatment arrangement was not compatible and the participant withdrew from the study.

The Therapist Adherence form from her treatment sessions indicated an average rating of 3.43 (SD = 1.13) for how much homework she completed and an average rating of 3.57 (SD = .79) for how thoroughly the homework was completed. She also received an average rating of 3.43 (SD = 1.13) for how active she had been in pursuing treatment goals and 3.29 (SD = .49) for the extent to which she understood the assigned homework.
She was usually “mostly to completely engaged” in session (3.57, SD = .53) and was rated as “a little to not at all difficult to work with” (.14, SD = .38) for sessions.

_Treatment non-completer 4 (N4)._ The participant was a 20-year-old single, unemployed Caucasian female, who was living with and caring for her elderly grandmother. According to her self report, she had not used methamphetamine in 2 weeks at the time of enrollment, and had 2 ½ year history of use, during which she met criteria for methamphetamine dependence. She also met criteria for alcohol abuse and polysubstance abuse in the past month (i.e., marijuana) and reported that it had been a week since her last drink. Due to her intense substance use, N4 reported that she has strained relationships with her family and has a criminal record related to breaking and entering (to obtain money to buy methamphetamine). Two weeks prior to participating in the study, N4 had been referred by her probation officer to attend individual sessions with a counselor through VBCCDHD, on a weekly basis to address substance related difficulties. At the time of initial assessment and through the duration of this study, N4 was not receiving any pharmacological treatment.

_Course of treatment._ N4 began treatment after a 2-week baseline, completing the BSI and COPE on four separate occasions. In addition to the general goals of treatment (i.e., achieve and maintain abstinence, reduce urges, manage unstable emotions, decrease cognitive dysregulation, and increase positive coping skills), this participant identified additional goals (i.e., reduce impulsiveness related to substance use, be more assertive with her peer group, express her needs to others in a healthy way, and build a more meaningful relationship with her mother). N4 completed five treatment sessions over the course of 1 month. During that time she consistently was on time for sessions, and was
making a notable effort to implement new behaviors between sessions, although she had repeated difficulty in several types of situations. N4 had used substances (marijuana, methamphetamine or alcohol) between each treatment session, except for between sessions three and four. Notably, her use decreased over the course of treatment, although she was not able to achieve abstinence. The participant was also starting to notice that she was expressing her opinions (without intense anger) with her peers more frequently as well. She repeatedly expressed dissonance between feelings of accomplishment with the gains she was making, and extreme disappointment in her treatment status as well, which was a common topic of sessions and a treatment target.

After completing session 5, N4 cancelled the next appointment, then failed to attend the following session. Via phone she disclosed to the therapist that she had relapsed, and her family was becoming more concerned about her living situation and obligations (i.e., her role to take care of her ill grandmother in her grandmother's home). She also disclosed that she had concerns of being pregnant. Subsequently, N4 moved out of her grandmother's home, was unable to find an alternative place to live, and began living transiently with friends who frequently used substances. At this time N4 stopped making phone calls and did not schedule any additional sessions. Several messages were left for N4, and a final letter was sent to her personal post office box, to which she did not respond. The Therapist Adherence form from her treatment sessions indicated an average rating of 3.40 (SD = .89) for how much homework she completed and an average rating of 3.20 (SD = .84) for how thoroughly the homework was completed. She also received an average rating of 2.20 (SD = 1.64) for how active she had been in pursuing treatment goals and 3.80 (SD = .45) for the extent to which she understood the assigned homework.
She was usually “mostly to completely engaged” in session (3.80, SD = .45) and was rated as “somewhat” or “not at all difficult to work with” (.40, SD = .55) for sessions.

Treatment non – Completer 5 (N5). The participant was a 33-year-old divorced, Caucasian female, who was in a dating relationship. She had two children (ages 12 and 10) and was employed part to full-time at a fast-food restaurant. According to her self report, she had not used methamphetamine in 4½ months at the time of assessment. She met criteria for methamphetamine dependence within the last year and reported a 3 year history of use. During this time, N5 reported that she would use a gram every day and had tried, unsuccessfully, to quit several times. At the time of assessment, she also reported marijuana dependence in the last year and reported a binge drinking episode 4 days prior. Due to her intense substance use, N5 reported that she had spent several months in jail and had a criminal record. She also noted that her intimate relationships have been impaired and her relationships with her children have been strained. Six months prior to participating in this study, N5 had been court mandated to attend the ND program through VBCCDHD. During this time she relapsed twice and returned to jail for several weeks. She also was receiving psychopharmacological treatment for 3 months prior to enrolling in this study and was stabilized on Wellbutrin (200 mg) and Depakote (250 mg) at assessment and through the duration of treatment.

Course of treatment. N5 began treatment after a 1-week baseline, completing the BSI and COPE on two separate occasions. In addition to the general goals of treatment (i.e., achieve and maintain abstinence, reduce urges, manage unstable emotions, decrease cognitive dysregulation, and increase positive coping skills), this participant identified additional goals for treatment (i.e., rebuild positive relationships with her children and
mother, develop new positive relationships, increase her level of honesty and willingness to talk about difficult issues, work towards developing a career, and increase behaviors related to acceptance, patience and her sense of spirituality). N5 completed eight treatment sessions over the course of three months and was consistently 5-10 minutes late for the first four sessions.

Throughout the course of therapy, the participant cancelled sessions seven times and the therapist cancelled and rescheduled one session due to a conflicting meeting. Between treatment sessions 3 and 4 there was a 9-week lapse, three of which were scheduled and discussed prior to beginning treatment (therapist unavailable). Prior to this break, the therapist and participant arranged to stay in contact via telephone, however N5 did not answer or return calls on several occasions. Upon returning, the therapist and participant scheduled session 4, however, the client cancelled this session and two more before conducting the session. The participant arrived 30-minutes late for this session.

Throughout therapy, the participant often engaged in behaviors consistent with active-passivity and apparent competence, which presented a dialectical dilemma that proved challenging to balance. In addition, the client appeared to understand homework assignments but often did not fully complete them. Further, diary cards were often completed during session as the participant did not bring the cards to session. She often reported that she completed them but forgot to bring them to session. Full disclosure during therapy also became an issue following when the participant failed to disclose alcohol use. This incident was discussed and the participant reported she did not disclose due to fear of disappointing the therapist, which was discussed in the context of the therapeutic relationship and implementing new skills.
During sessions 5-8, the participant made notable improvements in her relationships with her children and mother and reported that her children had stated that "their mom was back." She described several situations in which she engaged in positive behaviors with her children even when she needed to provide consequences for her children. She also reported that her children seemed to respect her more. The participant reported feeling proud that she was controlling her anger with her children, mother, ex-husband, and coworkers using emotion regulation and mindfulness skills. She was also given the responsibility of training a new employee at work as her supervisor had a newfound trust that she would control her anger and frustration and act in a respectful manner. In addition, other individuals in her group therapy through VBCCDHD noted that she was acting less impulsively and one individual inquired about this adjunctive treatment due to the changes she observed in the participant’s behavior. The participant expressed her pleasure with the skills she had learned and stated that she was committed to completing treatment. However, after treatment session 8, the participant cancelled two sessions due to work schedule conflicts. During that time, the therapist’s schedule also changed which required restructuring regular meeting times. After multiple attempts to initiate contact, the participant was sent a letter, to which she did not respond. At this point her file was closed.

The Therapist Adherence form was completed for all eight therapy sessions for N5. The TAF indicated an average rating of 2.25 (SD = 1.39) for how much homework she completed and an average rating of 2.38 (SD = 1.30) for how thoroughly the homework was completed. She also received an average rating of 2.75 (SD = .46) for how active she had been in pursuing treatment goals and 3.25 (SD = .71) for the extent to
which she understood the assigned homework. She was usually “mostly to completely engaged” in session (4.00, SD = .0) and was rated as “a little to not at all difficult to work with” (.75, SD = .46) when in session.

**Completer vs. non-completer differences.** Although there is a strong emphasis on individual assessment and progress in this single-case study, there are trends that suggest initial group differences between those that completed and those that did not complete treatment. These differences offer additional information and understanding of the participants, and are apparent at pretreatment.

All participants were involved with concurrent substance abuse treatment via the local health department. However, three different treatment options were employed by the study participants. All four treatment completers and N5 were court mandated to attend a weekly substance abuse treatment group (2 hours per week) that they had begun during jail time served related to substance abuse or possession charges. Jail time ranged for each of these participants from several weeks to several months, depending on probation violations (i.e., substance use or possession) after their initial jail time served. Treatment non-completers N1 and N3 self-referred to the health department for intensive outpatient substance abuse therapy in a group setting 2-6 hours per week. Treatment non-completers N2 and N4 self-referred to the health department for individual substance abuse treatment sessions for 1 hour per week.

Demographically, the participants are similar in race, background, and financial status, however the completer group ($M = 38.75, SD = 8.02$) was nearly 10 years older than the non-completer group ($M = 29.00, SD = 7.42$), although this difference was not statistically significant, [$t(7) = 1.893, p = .100$], see Table 3. In observing initial
assessment measures, treatment completers used significantly fewer substances to cope with difficult situations ($M = .35, SD = .70$) at pretreatment, measured by the COPE substance use subscale, as compared to the non-completers ($M = 6.73, SD = 4.97$), [$t (7) = 2.516, p = .040$]. At pretreatment, completers also demonstrated more adaptive acceptance skills ($M = 25.6, SD = 2.19$), measured by the KIMS accept without judgment subscale, as compared to the non-completers ($M = 19.00, SD = 2.71$), [$t (5.776) = 3.949, p = .008$]. Other variables and measures also demonstrated some trend differences between treatment completers and non-completers (i.e., months since participants last used methamphetamine, duration of methamphetamine use, Zanarini BPD Interview measuring BPD symptoms, BSI Global Severity Index, COPE negative subscale, Beck Depression Inventory score, and KIMS observe subscale) although these variables were not statistically significant (see Table 3 for values). Also note several other variables of interest revealed no differences between groups (see Table 3).

**Hypotheses**

**Hypothesis 1.** Support for H1, reduction in the participants’ overall level of distress, was assessed by a reduction on the participants’ Global Severity Index (GSI) on the Brief Symptom Inventory (BSI). This variable was assessed after each therapy session (see figures 1, 2 and 3 for details on each participant). For participants who completed all treatment sessions, this evaluation is based on comparison of average pretreatment GSI to follow-up GSI, whereas the last completed GSI score finished during treatment was utilized for those who did not complete the treatment protocol (see Table 4).
Table 3

T-test Comparisons of Completers vs. Non-Completers: Pre-Treatment Assessment

<table>
<thead>
<tr>
<th></th>
<th>Completers</th>
<th>Non-Completers</th>
<th>t (df)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M (SD)</td>
<td>M (SD)</td>
<td>t (df)</td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>38.75 (8.02)</td>
<td>29.00 (7.42)</td>
<td>1.89 (7.00)+</td>
</tr>
<tr>
<td><strong>Last Used Methamphetamine (months)</strong></td>
<td>6.10 (2.16)</td>
<td>3.50 (5.05)</td>
<td>.962 (3.88)+</td>
</tr>
<tr>
<td><strong>Duration of Methamphetamine Use (yrs)</strong></td>
<td>7.80 (4.28)</td>
<td>3.50 (3.76)</td>
<td>1.60 (6.89)+</td>
</tr>
<tr>
<td><strong>Brief Symptom Inventory – GSI</strong></td>
<td>.823 (2.15)</td>
<td>1.467 (2.40)</td>
<td>1.31 (6.35)</td>
</tr>
<tr>
<td><strong>COPE Positive Skill Use Subscale</strong></td>
<td>7.12 (2.15)</td>
<td>4.70 (2.40)</td>
<td>-1.59 (6.86)</td>
</tr>
<tr>
<td><strong>COPE Resistance Subscale</strong></td>
<td>4.47 (1.50)</td>
<td>3.53 (1.78)</td>
<td>-.853 (6.95)</td>
</tr>
<tr>
<td><strong>COPE Negative Skill Use Subscale</strong></td>
<td>1.46 (1.96)</td>
<td>5.60 (3.44)</td>
<td>2.27 (6.48)+</td>
</tr>
<tr>
<td><strong>COPE Substance Use Subscale</strong></td>
<td>.35 (.70)</td>
<td>6.73 (4.97)</td>
<td>2.52 (7.00)*</td>
</tr>
<tr>
<td><strong>Zanarani BPD Interview</strong></td>
<td>13.00 (2.74)</td>
<td>16.75 (3.86)</td>
<td>-1.64 (5.26)+</td>
</tr>
<tr>
<td><strong>Drug Use Questionnaire (DAST 20)</strong></td>
<td>15.40 (2.41)</td>
<td>14.50 (3.00)</td>
<td>.487 (5.75)</td>
</tr>
<tr>
<td><strong>Beck Depression Inventory-II</strong></td>
<td>21.2 (14.06)</td>
<td>32.75 (6.02)</td>
<td>-1.66 (5.65)+</td>
</tr>
<tr>
<td><strong>KIMS Observe Subscale</strong></td>
<td>41.00 (4.53)</td>
<td>26.50 (13.50)</td>
<td>2.28 (7.00)+</td>
</tr>
<tr>
<td><strong>KIMS Describe Subscale</strong></td>
<td>23.60 (4.93)</td>
<td>23.50 (11.39)</td>
<td>.016 (3.90)</td>
</tr>
<tr>
<td><strong>KIMS Act with Awareness Subscale</strong></td>
<td>28.60 (5.90)</td>
<td>25.50 (9.00)</td>
<td>.594 (4.98)</td>
</tr>
<tr>
<td><strong>KIMS Accept with out Judgment</strong></td>
<td>25.60 (2.19)</td>
<td>19.00 (2.71)</td>
<td>3.95 (5.78)**</td>
</tr>
<tr>
<td><strong>Subscale</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acceptance &amp; Action Questionnaire</strong></td>
<td>41.40 (7.57)</td>
<td>46.75 (11.93)</td>
<td>-.780 (4.87)</td>
</tr>
<tr>
<td><strong>ERQ – Reappraisal</strong></td>
<td>25.80 (4.38)</td>
<td>19.75 (9.71)</td>
<td>1.16 (3.98)</td>
</tr>
<tr>
<td><strong>ERQ – Suppression</strong></td>
<td>14.40 (5.41)</td>
<td>18.75 (8.62)</td>
<td>-.880 (4.83)</td>
</tr>
<tr>
<td><strong>Toronto Alexithymia Scale – 20</strong></td>
<td>56.40 (16.46)</td>
<td>64.75 (16.11)</td>
<td>-.765 (6.63)</td>
</tr>
</tbody>
</table>

NOTE: *p < .05 (2-tailed). **p < .01. (2-tailed). + potential trends between groups
Figure 1

Global Severity Index for Brief Symptom Inventory – Group A

BSI: Global Severity Index

Total Score

Session

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Figure 2

Global Severity Index for Brief Symptom Inventory – Group B
Notably, 80% of non-completers had GSI scores in the clinically significant range of distress at pre-treatment, and 3 of the 5 treatment non-completers (i.e., N1, N2 & N3) demonstrated a significant reduction during the course of their completed therapy sessions. The remaining participants (i.e., N4 & N5) only reported a mild reduction in their overall level of distress. Additionally, 3 of the 4 participants who completed the treatment protocol demonstrated reductions in their GSI at posttreatment assessment, although all three had scores within a normative range at pretreatment. Participant C3 demonstrated notable gains over the course of therapy (pre = 1.94, post = 1.36) but still reported an elevated GSI.
Table 4
Global Severity Index for Brief Symptom Inventory for Participants at Pre-Treatment, Last Treatment Session, Follow-Up, 1-Month and 3-Month

<table>
<thead>
<tr>
<th>Participants</th>
<th>Pre-Treatment</th>
<th>Last Session</th>
<th>Follow-Up</th>
<th>1-Month</th>
<th>3-Month</th>
<th>Pre-Post Change</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C1</td>
<td>.43</td>
<td>0.00</td>
<td>0.00</td>
<td>.02</td>
<td>0.00</td>
<td>-.43</td>
<td>100.00</td>
</tr>
<tr>
<td>C2</td>
<td>.29</td>
<td>0.00</td>
<td>0.00</td>
<td>.02</td>
<td>0.00</td>
<td>-.29</td>
<td>100.00</td>
</tr>
<tr>
<td>C3</td>
<td>1.94</td>
<td>1.30</td>
<td>1.36</td>
<td>1.28</td>
<td>2.00</td>
<td>-.58</td>
<td>29.90</td>
</tr>
<tr>
<td>C4</td>
<td>.63</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>-.63</td>
<td>100.00</td>
</tr>
<tr>
<td>Non-completers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N1*</td>
<td>2.45</td>
<td>1.00</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-1.45</td>
<td>59.18</td>
</tr>
<tr>
<td>N2*</td>
<td>1.61</td>
<td>.42</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-1.19</td>
<td>73.91</td>
</tr>
<tr>
<td>N3*</td>
<td>1.20</td>
<td>.51</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-.69</td>
<td>57.50</td>
</tr>
<tr>
<td>N4*</td>
<td>1.58</td>
<td>1.40</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-.18</td>
<td>11.39</td>
</tr>
<tr>
<td>N5*</td>
<td>.49</td>
<td>.25</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-.24</td>
<td>48.98</td>
</tr>
</tbody>
</table>

Note: *Participant N1 completed 2, N2 completed 9, N3 completed 7, N4 completed 5 and N5 completed 8 treatment sessions respectively.

Hypothesis 2. Support for H2, increase in positive coping skills and behaviors, was assessed using various measures, and includes all participants (i.e., completers and non-completers) in evaluation of some variables, and only completers for others (see figures 4, 5 and 6 for details on each participant – positive coping).

Positive COPE subscales. Both COPE positive skills subscales, positive coping and restraint, were assessed for all participants. For participants who completed all treatment sessions, this evaluation compares average pretreatment COPE scores to
follow-up COPE scores, whereas the last completed COPE score finished during the course of treatment was utilized for those who did not complete the treatment protocol (see Table 5).

Figure 4
COPE Positive Coping Skills – Group A
Figure 5

COPE Positive Coping Skills – Group B

COPE: Positive Coping Behaviors

Total Score

Session
Overall, 3 of the 4 participants who completed the protocol demonstrated improvements on positive COPE skills. The non-responsive completer, C1, demonstrated a significant decrease at the beginning of treatment which gradually improved during therapy. However, this measure was inconsistent with other treatment indicators for this individual. Four of the five non-completers demonstrated mild to very significant improvements for positive COPE skills during the course of their completed treatment sessions, whereas N5 made no notable movement (see Table 5).
Table 5
Positive Coping Skills from COPE Measure for Participants at Pre-Treatment, Last Treatment Session, Follow-Up, 1-Month and 3-Month

<table>
<thead>
<tr>
<th>Participants</th>
<th>Pre-Treatment</th>
<th>Last Session</th>
<th>Follow-Up</th>
<th>1-Month</th>
<th>3-Month</th>
<th>Pre-Post Change</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C1</td>
<td>7.25</td>
<td>5.00</td>
<td>5.25</td>
<td>6.50</td>
<td>6.25</td>
<td>-2.00</td>
<td>-27.59</td>
</tr>
<tr>
<td>C2</td>
<td>10.00</td>
<td>12.00</td>
<td>12.00</td>
<td>12.00</td>
<td>12.00</td>
<td>2.00</td>
<td>16.67</td>
</tr>
<tr>
<td>C3</td>
<td>4.92</td>
<td>8.75</td>
<td>6.5</td>
<td>5.25</td>
<td>4.75</td>
<td>1.58</td>
<td>24.31</td>
</tr>
<tr>
<td>C4</td>
<td>6.30</td>
<td>7.75</td>
<td>7.25</td>
<td>7.5</td>
<td>7.75</td>
<td>.95</td>
<td>13.10</td>
</tr>
<tr>
<td>Non-completers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N1*</td>
<td>1.92</td>
<td>2.75</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.83</td>
<td>30.18</td>
</tr>
<tr>
<td>N2*</td>
<td>5.44</td>
<td>8.25</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2.81</td>
<td>34.06</td>
</tr>
<tr>
<td>N3*</td>
<td>7.91</td>
<td>10.50</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2.59</td>
<td>24.67</td>
</tr>
<tr>
<td>N4*</td>
<td>2.81</td>
<td>8.25</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>5.44</td>
<td>65.94</td>
</tr>
<tr>
<td>N5*</td>
<td>5.88</td>
<td>6.00</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.12</td>
<td>2.04</td>
</tr>
</tbody>
</table>

Note: *Participant N1 completed 2, N2 completed 9, N3 completed 7, N4 completed 5 and N5 completed 8 treatment sessions respectively.

For the COPE subscale restraint, 3 of the 4 completers demonstrated mild to moderate gains (see Table 6). Again, C1 had a high pretreatment assessment score, which declined sharply when treatment began, followed by gradual improvement. All five of the non-completers demonstrated mild to moderate gains in this skill area, with N1 showing a mild decrease after two sessions (see Table 6).
Table 6

Restraint Coping Skills from COPE Measure for Participants at Pre-Treatment, Last Treatment Session, Follow-Up, 1-Month and 3-Month

<table>
<thead>
<tr>
<th>Participants</th>
<th>Pre-Treatment</th>
<th>Last Treatment</th>
<th>Follow-Up</th>
<th>1-Month</th>
<th>3-Month</th>
<th>Pre-Post Change</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C1</td>
<td>6.20</td>
<td>4.00</td>
<td>4.00</td>
<td>5.00</td>
<td>4.00</td>
<td>-2.2</td>
<td>-35.48</td>
</tr>
<tr>
<td>C2</td>
<td>4.00</td>
<td>12.00</td>
<td>12.00</td>
<td>12.00</td>
<td>12.00</td>
<td>8.00</td>
<td>66.67</td>
</tr>
<tr>
<td>C3</td>
<td>2.67</td>
<td>7.00</td>
<td>5.00</td>
<td>4.00</td>
<td>2.00</td>
<td>1.33</td>
<td>46.60</td>
</tr>
<tr>
<td>C4</td>
<td>5.00</td>
<td>8.00</td>
<td>9.00</td>
<td>7.00</td>
<td>8.00</td>
<td>4.00</td>
<td>44.44</td>
</tr>
</tbody>
</table>

Non-completers

<table>
<thead>
<tr>
<th>Participants</th>
<th>Pre-Treatment</th>
<th>Last Treatment</th>
<th>Follow-Up</th>
<th>1-Month</th>
<th>3-Month</th>
<th>Pre-Post Change</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1*</td>
<td>1.67</td>
<td>1.00</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-0.67</td>
<td>-40.12</td>
</tr>
<tr>
<td>N2*</td>
<td>5.44</td>
<td>8.25</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2.81</td>
<td>34.06</td>
</tr>
<tr>
<td>N3*</td>
<td>3.25</td>
<td>6.00</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2.75</td>
<td>45.83</td>
</tr>
<tr>
<td>N4*</td>
<td>2.00</td>
<td>3.00</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1.00</td>
<td>33.33</td>
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<tr>
<td>N5*</td>
<td>5.50</td>
<td>6.00</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.5</td>
<td>9.09</td>
</tr>
</tbody>
</table>

Note: *Participant N1 completed 2, N2 completed 9, N3 completed 7, N4 completed 5 and N5 completed 8 treatment sessions respectively.

**Diary card skills.** Participants’ increase in positive coping skills and behaviors can also be assessed by their report of utilizing newly acquired skills via DBT diary cards. Treatment completers reported that during their last week of treatment they used each of their mindfulness skills daily (see Table 7). All emotion regulation skills were used daily by participants C1 and C3 (see Table 7 and Figure 7) and C3, while C2 (77.1%; see Figure 8) and C4 (80.0%) reported frequent use during opportunities to use them. Lastly, distress tolerance skills were used daily by two participants (C1 and C3; see...
Figure 9), whereas the other two reported moderate (C2 = 65.7%) and mild use (C4 = 25.0%; see Figure 10).

Table 7

Diary Card Skills Used Last Week of Treatment – Percent of Skills Actually Used out of Daily Opportunities to Use Skills

<table>
<thead>
<tr>
<th>Treatment Completers</th>
<th>Mindfulness</th>
<th>Emotion Regulation</th>
<th>Distress Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session 12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C1</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>C2</td>
<td>100.0</td>
<td>77.1</td>
<td>65.7</td>
</tr>
<tr>
<td>C3</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>C4</td>
<td>100.0</td>
<td>80.0</td>
<td>25.0</td>
</tr>
</tbody>
</table>

Figure 7

DBT Skills Used for Treatment Completer 1
Figure 8

DBT Skills Used for Treatment Completer 2

![Completer 2 - DBT Skills Used](image)

Figure 9

DBT Skills Used for Treatment Completer 3

![Completer 3 - DBT Skills Used](image)
**Figure 10**

**DBT Skills Used for Treatment Completer 4**

**Negative COPE subscales.** Both treatment completers and non-completers also reported some changes in their use of maladaptive coping skills, measured by the COPE negative coping subscale (see Figures 11, 12 and 13 for participant details). Treatment completers reported notably lower scores on this measure at pre-treatment assessment, then demonstrated mild reductions (see Table 8). Similarly, two (N3 and N5) of the five non-completers reported low scores on this measure at pretreatment and then noted mild reductions on this scale. However, three of the five treatment non-completers endorsed high scores at pre-treatment assessment and two subsequently reported marked decreases during their last respective treatment session (N2 = 79% and N4 = 67%; see Table 8).
Figure 11

COPE Negative Coping Skills – Group A

NOTE: Negative COPE subscale is comprised of denial and behavioral disengagement scales.
Figure 12

COPE Negative Coping Skills – Group B

NOTE: Negative COPE subscale is comprised of denial and behavioral disengagement scales.
Figure 13
COPE Negative Coping Skills – Group C

NOTE: Negative COPE subscale is comprised of denial and behavioral disengagement scales.
Table 8

Negative Coping Skills from COPE Measure for Participants at Pre-Treatment, Last Treatment Session, Follow-Up, 1-Month and 3-Month

<table>
<thead>
<tr>
<th>Participants</th>
<th>Pre-Treatment</th>
<th>Last Session</th>
<th>Follow-Up</th>
<th>1-Month</th>
<th>3-Month</th>
<th>Pre-Post Change</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C1</td>
<td>.50</td>
<td>0.00</td>
<td>0.00</td>
<td>.50</td>
<td>0.00</td>
<td>-.50</td>
<td>100.00</td>
</tr>
<tr>
<td>C2</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>C3</td>
<td>4.33</td>
<td>3.00</td>
<td>.50</td>
<td>2.50</td>
<td>3.00</td>
<td>-3.83</td>
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</tr>
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<td>C4</td>
<td>1.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>-1.00</td>
<td>100.00</td>
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<tr>
<td>Non-completers</td>
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<td></td>
</tr>
<tr>
<td>N1*</td>
<td>7.67</td>
<td>6.00</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-.67</td>
<td>22.77</td>
</tr>
<tr>
<td>N2*</td>
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<td>-</td>
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<td>-.56</td>
<td>35.90</td>
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<tr>
<td>N4*</td>
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<td>4.00</td>
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<td>-</td>
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<td>N5*</td>
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<td>1</td>
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<td>-</td>
<td>-1.38</td>
<td>57.98</td>
</tr>
</tbody>
</table>

Note: *Participant N1 completed 2, N2 completed 9, N3 completed 7, N4 completed 5, and N5 completed 8 treatment sessions respectively.

**ERO and KIMS.** Additionally, treatment completers demonstrated increased positive coping skills on the Emotion Regulation Questionnaire by increasing use of reappraisal, ranging from 35-40%, and decreasing use of suppression by 20-33% (see Table 9). However, participant C1 demonstrated no change on the ERQ suppression subscale. Participants also demonstrated variable gains on the different subscales of the Kentucky Inventory of Mindfulness Skills. At pretreatment 3 of the 4 participants were typically scoring between the means of students and those with BPD, although C3 scored...
lower than the BPD norms. Although all participants made notable gains in at least 3 of the 4 subscales, C1 and C2 made consistent and significant increases (i.e., 17% up to 69%) in the use of all mindfulness skills. Two other participants reported notable, but variable improvements (C4 = 0 to 44% and a C3 = mild decrease to 13%; see Table 10). At posttreatment 3 of the 4 scored better than the student norms on most subscales.

Table 9

Emotion Regulation Questionnaire Scores for Treatment Completing Participants at Pre-Treatment, Follow-Up, 1-Month and 3-Month

<table>
<thead>
<tr>
<th>Participants</th>
<th>Pre-Treatment</th>
<th>Follow-Up</th>
<th>1-Month</th>
<th>3-Month</th>
<th>Pre-Post Change</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERQ Reappraisal</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>C1</td>
<td>30</td>
<td>42</td>
<td>36</td>
<td>40</td>
<td>12</td>
<td>40.0</td>
</tr>
<tr>
<td>C2</td>
<td>30</td>
<td>42</td>
<td>42</td>
<td>42</td>
<td>12</td>
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<tr>
<td>C3</td>
<td>23</td>
<td>31</td>
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<td>34.8</td>
</tr>
<tr>
<td>C4</td>
<td>26</td>
<td>36</td>
<td>29</td>
<td>28</td>
<td>10</td>
<td>38.5</td>
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<tr>
<td>ERQ Suppression</td>
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</tr>
<tr>
<td>C1</td>
<td>13</td>
<td>13</td>
<td>7</td>
<td>10</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>C2</td>
<td>6</td>
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<td>4</td>
<td>4</td>
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<td>33.3</td>
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<tr>
<td>C3</td>
<td>20</td>
<td>15</td>
<td>21</td>
<td>20</td>
<td>-5</td>
<td>25.0</td>
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<tr>
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<td>15</td>
<td>12</td>
<td>9</td>
<td>7</td>
<td>-3</td>
<td>20.0</td>
</tr>
</tbody>
</table>
Table 10
Kentucky Inventory of Mindfulness Scale Scores for Treatment Completing Participants at Pre-Treatment, Follow-Up, 1-Month and 3-Month

<table>
<thead>
<tr>
<th>Participants</th>
<th>Pre-Treatment</th>
<th>Follow-Up</th>
<th>1-Month</th>
<th>3-Month</th>
<th>Pre-Post Change</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KIMS - Observe</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>C1</td>
<td>48</td>
<td>56</td>
<td>57</td>
<td>48</td>
<td>8</td>
<td>16.7</td>
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<tr>
<td>C2</td>
<td>41</td>
<td>59</td>
<td>59</td>
<td>59</td>
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<tr>
<td>C4</td>
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<td>48</td>
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<td>C1</td>
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<td>38</td>
<td>24</td>
<td>11</td>
<td>42.3</td>
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<tr>
<td>C2</td>
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<td>40</td>
<td>11</td>
<td>42.3</td>
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<tr>
<td>C3</td>
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<td>23</td>
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<td>29.4</td>
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<tr>
<td>C4</td>
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<td>KIMS – Act Awareness</td>
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<td>32</td>
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<td>37.5</td>
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<td>13.6</td>
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<tr>
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<td>34.6</td>
</tr>
<tr>
<td>KIMS – Acceptance w/o Judgment</td>
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<tr>
<td>C1</td>
<td>27</td>
<td>32</td>
<td>37</td>
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<td>40</td>
<td>11</td>
<td>40.7</td>
</tr>
<tr>
<td>C3</td>
<td>25</td>
<td>23</td>
<td>27</td>
<td>28</td>
<td>-2</td>
<td>-8.0</td>
</tr>
<tr>
<td>C4</td>
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<td>39</td>
<td>40</td>
<td>39</td>
<td>12</td>
<td>44.4</td>
</tr>
</tbody>
</table>

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Lastly, participants who completed treatment also demonstrated skillful responses to potential opportunities to use on the SARRTS. All participants responded verbally to various situations in under 4 seconds (range = .5 to 3.7) for each of the five risky scenarios, with responses that were rated by coders as “drug use unlikely” or “drug use very unlikely”.

Hypothesis 3. Evidence related to H3, reduction in substance use and cravings to use substances, is assessed by various measures including the COPE substance use subscale, diary card self-report, objective urine analysis, days in jail due to substance use (i.e., violation of probation), SCID substance abuse and dependence, and the Drug Use Questionnaire.

COPE substance use subscale. Both treatment completers and non-completers completed the COPE substance subscale after each session (see Figure 14, 15 and 16 for individual participant details). All but one treatment completer (C1) endorsed that she did not use substances to moderate her mood at the current time. Conversely, all treatment non-completers except N5 (no use) endorsed frequent use of substances to manage distress, ranging from 4.7 to 12.0 (on a scale from 0 = never to 12 = always in stressful or difficult situations). All treatment completers endorsed no use of substances as a means of coping at post-treatment, and three non-completers reported a significant decrease in use. N4 and N5 were exceptions to this trend, as N4 reported a 66.6% decrease in use at the time she discontinued the study (see Table 11) and N5 reported no use at pretreatment or during therapy. Notably, most non-completers demonstrated a significant reduction on this measure during their involvement in therapy, while most treatment completers experienced a floor effect, which yielded limited variability.
Figure 14

COPE Substance Use Coping Skills – Group A

COPE: Substance Use

Baseline

Treatment

Session

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Figure 15
COPE Substance Use Coping Skills – Group B

COPE: Substance Use

Baseline
Treatment

Session

Total Score

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Figure 16

COPE Substance Use Coping Skills – Group C

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### Table 11

**Substance Use Coping Skills from COPE Measure for Participants at Pre-Treatment, Last Treatment Session, Follow-Up, 1-Month and 3-Month**

<table>
<thead>
<tr>
<th>Participants</th>
<th>Pre-Treatment</th>
<th>Last Session</th>
<th>Follow-Up</th>
<th>1-Month</th>
<th>3-Month</th>
<th>Pre-Post Change</th>
<th>Percent Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completers</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>C1</td>
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<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>C3</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>C4</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Non-completers</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N1*</td>
<td>4.67</td>
<td>0.00</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>- 4.67</td>
<td>100.00</td>
</tr>
<tr>
<td>N2*</td>
<td>11.25</td>
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<td>4.00</td>
<td>-</td>
<td>-</td>
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<td>- 8.00</td>
<td>66.67</td>
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<td>-</td>
<td>-</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Note: *Participant N1 completed 2, N2 completed 9, N3 completed 7, N4 completed 5, and N5 completed 8 treatment sessions respectively.

**Diary card substance use and cravings.** Data was collected from self-report daily diary cards from all participants during the treatment phase. During the course of treatment, all treatment completers denied using methamphetamine, and all but one denied using any type of substance (C3 reported alcohol use on two occasions). Treatment completers also reported very few intense cravings to use: C1 – two days during treatment, weeks 6; C2 – three days during treatment, weeks 2 and 3; C3 – three days during treatment, weeks 10 and 11; C4 – none.
Treatment non-completers reported significantly more substance use and cravings to use during their respective treatment involvement. N1 reported no use, but mild daily cravings during her first 2 weeks of treatment sessions. N2 reported 3 days of alcohol use during the second week of treatment, and 5 days of alcohol use during the eighth and ninth week of treatment (before termination). N2 also reported mild to moderate urges to use substances 73% of total days in treatment. N3 reported 3 days of using cocaine and methamphetamine in the fifth week of treatment (immediately before termination), and mild to moderate urges to use 38% of total days in treatment. N4 reported using marijuana or methamphetamine 7 days at various times, and reported experiencing moderate to intense cravings to use 88% of the days during the 5 weeks of treatment she completed. N5 reported that she used alcohol on three occasions and experienced no cravings. Four of the five treatment non-completers demonstrated a moderate reduction, either in intensity or frequency, for cravings to use once they completed treatment session 3 or 4.

**Urine analyses.** During all phases of this study all participants were subjected to random urine analysis testing completed by the local health department. During the 60 days prior to the enrollment of the treatment study N1 tested positive for methamphetamine, and during the pretreatment assessment phase N3 tested positive for methamphetamine and cocaine. During the treatment and follow up assessment phase (for treatment completers) no participant tested positive in a UA screen. Subsequently, no treatment completer returned to jail for violations of probation during the course of treatment or follow up. Additionally, despite the sporadic self reported substance use by non-completer participants, only one had a positive urine analysis (N4 tested positive for
THC). However, no non-completer returned to jail during their involvement with this study, although after they discontinued participation (i.e., their last attended session), we have no further information on these individuals.

*SCID and DAST-20.* Additional information (i.e., SCID substance abuse and dependence, and Drug Use Questionnaire) related to substance use is available for all treatment completers. At pretreatment, all participants met criteria for methamphetamine dependence within the past 12 months, in addition to C1 meeting criteria for alcohol and marijuana abuse, and C4 meeting criteria for marijuana dependence. At post-treatment, no treatment completer participant met criteria for any type of substance abuse or dependence. Also, all treatment completers had decreased scores on the Drug Use Questionnaire. While C3 only decreased her score by 17%, the other three had significant decreases, ranging from 75% to 86% (see Table 12).

Table 12

<table>
<thead>
<tr>
<th>Participants</th>
<th>Pre-Treatment</th>
<th>Follow-Up</th>
<th>1-Month</th>
<th>3-Month</th>
<th>Pre-Post Change</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>16</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>12</td>
<td>75.0</td>
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<tr>
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<td>2</td>
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<td>2</td>
<td>12</td>
<td>85.7</td>
</tr>
<tr>
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<td>12</td>
<td>10</td>
<td>5</td>
<td>10</td>
<td>2</td>
<td>16.7</td>
</tr>
<tr>
<td>C4</td>
<td>17</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>13</td>
<td>76.5</td>
</tr>
</tbody>
</table>

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Hypothesis 4. Data related to H4, DBT treatment facilitating consistent attendance of substance abuse treatment offered by VBCCDHD, seemed to demonstrate mixed results. During treatment, completer participants maintained consistent attendance of substance abuse treatment sessions based on percent attendance rates (C1: 88%, C2: 88%, C3: 94%, and C4: 93%). Conversely, all treatment non-completers, except for N5 (attendance rate of 89%), struggled to remain engaged in substance abuse treatment. N1 maintained an 86% attendance rate, but then discontinued treatment 5 weeks prior to discontinuing in DBT sessions. N2 had a 0% attendance rate after she discontinued substance abuse services 3 weeks after beginning DBT. She repeatedly noted interpersonal difficulties with her therapist and problems with scheduling. She remained in DBT for two additional months before she discontinued participation. N3 had a 65% attendance rate for substance abuse treatment sessions. Notably she quit sessions, but returned as targeted for DBT sessions, but then discontinued services for both substance abuse and DBT several weeks later. N4 had a 50% attendance rate, as she dropped out of substance abuse services after a few weeks of enrollment. N4 then discontinued DBT services 4 weeks later. However, these data are confounded by the additional contingency placed upon substance abuse treatment attendance for some (i.e., violation of probation) but not for others. Notably, several participants discussed their difficulty attending the substance treatment program, which became topics in DBT to help participants identify ways to use DBT skills to gain from the substance abuse treatment.

Hypothesis 5. Data collected related to H5 (participants who maintained regular session attendance and completed weekly homework will have better treatment outcomes than those who attended treatment sporadically and failed to complete homework on a
regular basis) was collected at each treatment session and during follow up outcome measures. Specifically, treatment completers scored between 3.08 to 3.75 (on a scale of 0-4) for completing most to all of their weekly homework, and scored between 3.08 to 3.92 for being mostly to completely active in pursuing treatment goals since last session as scored by the therapist assessment measure. Also, the treatment completers each had one or two no-show / missed sessions during the 12 weeks of DBT treatment. These participants all completed the treatment protocol and made notable gains, as discussed in previous hypotheses.

Treatment non-completers demonstrated similar results on the TAF (i.e., homework ranging from 2.25 to 3.43, and progress towards treatment goals ranging from 2.2 to 3.5). Two notable exceptions among non-completers are N4 and N5, who scored somewhat lower. Also, several non-completing participants had higher rates of no-shows / missed sessions based on the number of completed sessions. N1 completed two sessions and no-showed six times; N2 completed nine sessions and no-showed four times, N3 completed seven sessions and no-showed twice, N4 completed five sessions and no showed three times; and N5 completed eight sessions and cancelled 7 sessions. There are no additional outcome measures available for these participants.

Additional Treatment Goals

In addition to the stated hypotheses, ancillary treatment goals for treatment completers can be evaluated using various measures. First, the ZAN-BPD interview which assesses BPD characteristics, demonstrated that all 4 treatment completers decreased their total score from pretreatment. At pretreatment they looked most similar to those with BPD in a normative data sample, although C1 and C2 scored 3-7 points
higher. C3 decreased her symptoms by 41%, and the other 3 treatment completers made drastic decreases (93% to 100%; see table 13). The most notable improvements for all participants were in the affect disturbance area, and all participants looked more similar to the non-BPD sample at post-treatment. Additionally, depressive symptoms, measured by the BDI-II, were reduced for all participants. Three of the four participants reduced their pretreatment BDI-II score, which was in the mild range, by 91 to 100%. However, C3 had a BDI-II score of 44 at pretreatment, indicating severe depressive symptoms, and only reduced her score to 40 at post-treatment assessment (see Table 13).

Participants' level of experiential avoidance, as measured by the AAQ, at pretreatment was most similar to clinical samples for 3 of the 4 participants. However, this score was reduced at the end of treatment (ranging from 20% to 39%; see Table 13), with all but 1 participant appearing much similar to and scoring lower than non-clinical samples on the AAQ. Also, the participants overall measure of alexithymia, as measured by the TAS-20, was markedly reduced for 3 of the 4 participants (31% to 37%) 1 of whom had marked alexithymia traits, whereas C3 reduced her score by 9% (see table 13) and had the most notable alexithymia traits at pretreatment. Participants also focused on building a “life worth living” during their course of treatment. On daily diary cards, each participant evaluated the consistency of her actions with her own stated values and life she is trying to build for herself. Three treatment completers evaluated themselves in this area during the first weeks of treatment in the low to moderate range (1.7, 2.4, 2.9; range of 0 = very inconsistent to 5 = very consistent), but elevated their self-evaluations to 5.0, 4.0, and 5.0 by the last week of treatment. C3 began her self evaluations higher (4.0) and ended in a similar evaluation of her self.
<table>
<thead>
<tr>
<th>Participants</th>
<th>Pre-Treatment</th>
<th>Follow-Up</th>
<th>1-Month</th>
<th>3-Month</th>
<th>Pre-Post</th>
<th>Percent Change</th>
<th>Percent Change</th>
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<tr>
<td>C1</td>
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<td>2</td>
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<tr>
<td>C2</td>
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<td>0</td>
<td>0</td>
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<tr>
<td>C3</td>
<td>17</td>
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<td>15</td>
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<td>C4</td>
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<td>0</td>
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<tr>
<td><strong>Beck Depression Inventory</strong></td>
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<td></td>
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<tr>
<td>C1</td>
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<td>3</td>
<td>3</td>
<td>10</td>
<td>90.9</td>
<td></td>
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<tr>
<td>C2</td>
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<td>44</td>
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<td>36</td>
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<td>0</td>
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<td><strong>Acceptance Action Questionnaire</strong></td>
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<td>C1</td>
<td>41</td>
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<td>22</td>
<td>18</td>
<td>13</td>
<td>31.7</td>
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<tr>
<td>C2</td>
<td>41</td>
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<td>29</td>
<td>20</td>
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<tr>
<td>C4</td>
<td>36</td>
<td>27</td>
<td>29</td>
<td>21</td>
<td>9</td>
<td>20.0</td>
<td></td>
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<tr>
<td><strong>Toronto Alexithymia Scale - 20</strong></td>
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<td></td>
<td></td>
<td></td>
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<td>C1</td>
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<td>44</td>
<td>38</td>
<td>50</td>
<td>20</td>
<td>31.3</td>
<td></td>
</tr>
<tr>
<td>C2</td>
<td>35</td>
<td>24</td>
<td>24</td>
<td>27</td>
<td>11</td>
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<td>68</td>
<td>10</td>
<td>9.3</td>
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<tr>
<td>C4</td>
<td>49</td>
<td>31</td>
<td>29</td>
<td>30</td>
<td>18</td>
<td>36.7</td>
<td></td>
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</tbody>
</table>
**Exploratory pre-post group analyses.** Although this study is based on individual participants and their unique progress during the course of therapy, initial group analyses were conducted to further understand significant changes for individuals who completed treatment on various measures. These analyses were conducted with the full understanding that they are violating various assumptions, including violations of adequate power.

**Treatment completer participants.** Despite these limitations, basic t-test comparisons found that changes in several variables of interest were statistically significant for treatment completers from pre- to post-treatment (i.e., various assessment times including follow up, 1 month follow up, and 3 month follow up; see Table 14).

Statistical examination of pre-post changes revealed 24 statistically significant different comparisons across assessment measures completed by participants who completed treatment. Please see Table 14 for details on all mean analyses. Among these findings, the GSI was significantly lower at post-treatment follow up and 1 month as compared to pre-treatment. Participants also scored significantly lower across all three post-treatment assessment times (i.e., post, 1 month and 3 month follow up) as compared to pretreatment on the Zanarani BPD Interview, Drug Use Questionnaire, BDI-II, Toronto Alexithymia Scale – 20, and the Acceptance Action Questionnaire. Likewise, significant improvements were made at varying times of assessment for the Emotion Regulation Questionnaire – reappraisal subscale, and all subscales of the Kentucky Inventory of Mindfulness Skills.
Table 14

T-test Comparisons of Completers at Pre-Treatment and Posttreatment Assessments

<table>
<thead>
<tr>
<th>Measure</th>
<th>Pre-Treatment</th>
<th>Post-treatment</th>
<th>t (df)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td></td>
</tr>
<tr>
<td>Global Severity Index - FU</td>
<td>.82 (.76)</td>
<td>.35 (.68)</td>
<td>6.10 (3)**</td>
</tr>
<tr>
<td>Global Severity Index – 1MO</td>
<td>.82 (.76)</td>
<td>.325 (.64)</td>
<td>.012 (3)*</td>
</tr>
<tr>
<td>Zanarani BPD Interview - FU</td>
<td>11.00 (4.55)</td>
<td>2.00 (4.00)</td>
<td>8.33 (3)**</td>
</tr>
<tr>
<td>Zanarani BPD Interview – 1MO</td>
<td>11.00 (4.55)</td>
<td>2.50 (4.36)</td>
<td>6.43 (3)**</td>
</tr>
<tr>
<td>Zanarani BPD Interview – 3MO</td>
<td>11.00 (4.55)</td>
<td>3.75 (7.50)</td>
<td>3.53 (3)*</td>
</tr>
<tr>
<td>Drug Use Questionnaire – FU</td>
<td>14.75 (2.22)</td>
<td>5.00 (3.46)</td>
<td>3.76 (3)*</td>
</tr>
<tr>
<td>Drug Use Questionnaire – 1MO</td>
<td>14.75 (2.22)</td>
<td>2.75 (1.50)</td>
<td>6.74 (3)**</td>
</tr>
<tr>
<td>Drug Use Questionnaire – 3MO</td>
<td>14.75 (2.22)</td>
<td>4.25 (3.86)</td>
<td>3.62 (3)*</td>
</tr>
<tr>
<td>Beck Depression Inventory-II – FU</td>
<td>20.50 (16.13)</td>
<td>10.25 (19.84)</td>
<td>3.54 (3)*</td>
</tr>
<tr>
<td>Beck Depression Inventory-II – 1MO</td>
<td>20.50 (16.13)</td>
<td>9.75 (17.56)</td>
<td>4.43 (3)*</td>
</tr>
<tr>
<td>Beck Depression Inventory-II – 3MO</td>
<td>20.50 (16.13)</td>
<td>10.75 (19.55)</td>
<td>3.30 (3)*</td>
</tr>
<tr>
<td>Toronto Alexithymia Scale – FU</td>
<td>56.75 (18.98)</td>
<td>42.00 (19.82)</td>
<td>5.91 (3)**</td>
</tr>
<tr>
<td>Toronto Alexithymia Scale – 1MO</td>
<td>56.75 (18.98)</td>
<td>40.00 (20.18)</td>
<td>4.39 (3)*</td>
</tr>
<tr>
<td>Toronto Alexithymia Scale – 3MO</td>
<td>56.75 (18.98)</td>
<td>43.75 (19.12)</td>
<td>5.54 (3)*</td>
</tr>
<tr>
<td>Acceptance &amp; Action Questionnaire – FU</td>
<td>43.00 (7.70)</td>
<td>32.25 (11.24)</td>
<td>4.49 (3)*</td>
</tr>
<tr>
<td>Acceptance &amp; Action Questionnaire – 1MO</td>
<td>43.00 (7.70)</td>
<td>30.75 (8.81)</td>
<td>4.91 (3)*</td>
</tr>
<tr>
<td>Acceptance &amp; Action Questionnaire – 3MO</td>
<td>43.00 (7.70)</td>
<td>24.75 (10.24)</td>
<td>8.25 (3)**</td>
</tr>
<tr>
<td>Emotion Regulation Questionnaire (Reappraisal) – FU</td>
<td>27.25 (3.40)</td>
<td>37.75 (5.32)</td>
<td>-10.97 (3)**</td>
</tr>
<tr>
<td>KIMS Observe – FU</td>
<td>42.00 (4.55)</td>
<td>52.75 (5.85)</td>
<td>-4.43 (3)*</td>
</tr>
<tr>
<td>KIMS Describe – 1MO</td>
<td>24.50 (5.20)</td>
<td>33.00 (9.42)</td>
<td>-3.36 (3)*</td>
</tr>
<tr>
<td>KIMS Act with Awareness – FU</td>
<td>26.50 (4.12)</td>
<td>37.50 (9.61)</td>
<td>-3.40 (3)*</td>
</tr>
</tbody>
</table>

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Table 14 - Continued

<table>
<thead>
<tr>
<th></th>
<th>1MO</th>
<th>3MO</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>KIMS Act with Awareness</td>
<td>26.50(4.12)</td>
<td>36.50(7.85)</td>
<td>-3.92(3)*</td>
</tr>
<tr>
<td>KIMS Accept without Judgment</td>
<td>26.50(1.00)</td>
<td>36.00(6.16)</td>
<td>-3.67(3)*</td>
</tr>
<tr>
<td>KIMS Accept without Judgment</td>
<td>26.50(1.00)</td>
<td>35.25(5.50)</td>
<td>-3.77(3)*</td>
</tr>
</tbody>
</table>

NOTE: *p < .05 (2-tailed). **p < .01 (2-tailed); FU = follow-up / post treatment assessment; 1MO = 1 month follow-up assessment; 3MO = 3 month follow-up assessment.

*Non-completer participants.* Initial group analyses were also conducted for those participants who did not complete all treatment sessions to further understand significant changes for those individuals during the course of therapy. For these analyses, participants’ repeated measures assessment (i.e., COPE and BSI) completed after their last respective sessions were used. Notably there were significant differences in pivotal areas for participants, including a decrease in GSI from pre-treatment ($M = 1.47, SD = .71$) to last treatment session ($M = .72, SD = .47$), $[t(4) = 2.97, p = .041]$, and a decrease in their COPE substance use subscale from pretreatment ($M = 6.73, SD = 4.97$) to last treatment session ($M = .80, SD = 1.79$), $[t(4) = 3.19, p = .033]$ see table 15. Additionally, there was an increasing trend in the COPE positive skill use subscale and a decreasing trend for COPE negative skill use subscale, although neither of these variables was statistically significant (see table 15).
Table 15

T-test Comparisons of Treatment Non-Completers at Pre-Treatment and Last Repeated Assessments

<table>
<thead>
<tr>
<th></th>
<th>Pre-Treatment</th>
<th>Last Available</th>
<th>t (df)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global Severity Index</td>
<td>1.47 (.71)</td>
<td>.72 (.47)</td>
<td>2.97 (4)</td>
<td>.041</td>
</tr>
<tr>
<td>COPE Positive Skill Use Subscale</td>
<td>4.70 (2.40)</td>
<td>7.15 (2.93)</td>
<td>-2.60 (4)</td>
<td>.060</td>
</tr>
<tr>
<td>COPE Restraint Subscale</td>
<td>3.53 (1.78)</td>
<td>2.30 (1.03)</td>
<td>-1.57 (4)</td>
<td>.191</td>
</tr>
<tr>
<td>COPE Negative Skill Use Subscale</td>
<td>5.60 (3.44)</td>
<td>2.60 (2.16)</td>
<td>2.69 (4)</td>
<td>.055</td>
</tr>
<tr>
<td>COPE Substance Use Subscale</td>
<td>6.73 (4.97)</td>
<td>.80 (1.79)</td>
<td>3.19 (4)</td>
<td>.033</td>
</tr>
</tbody>
</table>

NOTE: *p < .05 (2-tailed).

*All participant group analyses.* Group analyses were conducted by examining slope changes for all participants as changes were observed from pre-treatment assessment (i.e., baseline) to the treatment phase. For these analyses, participants' completed repeated measures assessment (i.e., COPE subscales and BSI) were used, despite variable lengths of time participating in the study. There were no significant differences found for participants for the GSI, COPE negative skills use subscale, or COPE substance use subscale across pre-treatment to treatment sessions, despite a decreasing trend in slope for all three variables. Also, there was a increasing slope in the COPE positive skill use subscale and a decreasing trend for COPE restraint skill use subscale, although neither of these variables was statistically significant (see table 16).
Table 16

T-test Comparisons of Slope at Pre-Treatment and Treatment for all Participants

<table>
<thead>
<tr>
<th>Measure</th>
<th>Pre-Treatment</th>
<th>Treatment</th>
<th>t(df)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Severity Index</td>
<td>.009 (.167)</td>
<td>-.212 (.459)</td>
<td>1.267 (8)</td>
<td>.241</td>
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<tr>
<td>COPE Positive Skill Use</td>
<td>.083 (.768)</td>
<td>.271 (.320)</td>
<td>-.710 (8)</td>
<td>.298</td>
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<tr>
<td>COPE Restraint Subscale</td>
<td>.195 (.770)</td>
<td>.091 (.279)</td>
<td>.425 (8)</td>
<td>.682</td>
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<tr>
<td>COPE Negative Skill Use Subscale</td>
<td>-.086 (.417)</td>
<td>-.504 (.956)</td>
<td>.963 (8)</td>
<td>.364</td>
</tr>
<tr>
<td>COPE Substance Use Subscale</td>
<td>-.325 (.573)</td>
<td>-.859 (1.42)</td>
<td>1.103 (8)</td>
<td>.302</td>
</tr>
</tbody>
</table>

Follow-Up and Maintenance of Treatment Effects

For participants who completed the treatment protocol, there is additional assessment data that was gathered at 1 month and 3 months after each had complete treatment. Overall, several of these measures demonstrated fairly stable treatment gains over the course of 3 months post treatment, with some notable exceptions. GSI scores remained stable for 3 of the 4 participants. C3 had a significant increase at her 3 month follow-up (GSI = 2.00; see table 4), which is consistent with her self report of distress in that session. Likewise, positive coping skills from the COPE (see table 5), restraint coping skills from the COPE (see table 6), negative coping skills from the COPE (see table 8), ERQ scales (see table 9), DAST-20 score (see table 12), BDI-II score (see table 13), and ZAN-BPD interview (see table 13) demonstrated a similar trend, with a mild to moderate decrease in functioning or well-being for C3 by the 3 month assessment session.
All four participants indicated that they had been using their DBT skills and the skills had been useful across various situations at the one month follow up. Specifically, each participant rated that they had been using at least 90% of their skills at least a “medium amount/frequently” to a “very large amount/all the time”. Although this trend remained for most participants, C3 noted that overall she “tried to use her skills, but often could not” at the 3 month follow-up assessment. She only reported using her skills a “very small to medium amount” or sporadically since the last assessment session. Likewise, C3 reported reductions at 1 month and more so at 3 months in the consistency of her actions with her own stated values and life she is trying to build for herself, whereas the other participants maintained their treatment gains.

Participants’ SARRTS time to verbally respond to a risky scenario was typically under 2 seconds, with the exception of C3 taking 4-6 seconds to respond to most scenarios. However, all participants were rated on all their responses as “drug use unlikely” or “drug use very unlikely”. Several measures related to using substances during follow up (i.e., COPE substance use subscale, diary card self-reported use, SCID – substance use section, and objective urine analyses) were all consistent since the end of treatment, noting all participants reported they had not used substances. Additionally, 3 of the 4 participants reported no cravings, while C1 reported a few cravings at each assessment period.

Other measures demonstrated a variety of results across participants. First, the KIMS yielded mixed results among participants (see Table 10), with no clear trends in data. For example, there were moderate improvements on some scales and a loss of skills gained during treatment for others during the extended assessment period. Additionally,
the TAS-20 total score (see Table 13) demonstrated steady maintenance of treatment effects, with a moderate reduction in gains for C1. Lastly, the AAQ (see Table 13), which measures experiential avoidance, indicated that all participants continued to show marked improvements from follow up to 1 month assessment, in addition to even greater gains (i.e., decrease in experiential avoidance) at the 3 month assessment.

**Participant Satisfaction**

Each participant who completed all treatment sessions completed a client satisfaction survey at their first follow up assessment session. Results indicate that participants were overall very satisfied with their treatment experience. All participants endorsed a 4, on a scale of 1 to 4, which was indicative of very high treatment satisfaction in areas of the quality of service, receiving the kind of services wanted / needed, services meeting participant needs, willingness to recommend program to others, overall satisfactions, and services helping to deal with problems more effectively. Additionally, 3 of the 4 participants reported that they had made “excellent” progress, while C3 felt she had made “good” progress on personal goals set in the first treatment session.
CHAPTER IV

DISCUSSION

Overall Findings

This research project aimed to further explore the effectiveness of an abbreviated DBT approach in addressing the needs of women struggling with substance abuse and BPD features. Specifically, this project investigated whether a 12 session DBT protocol would positively impact treatment progress (e.g., increased abstinence, reduced cravings, increased attendance of treatment sessions, and better coping skills as they are functionally related to using differential skill behaviors for coping with emotion dysregulation, decreased impulsivity and distress tolerance) of methamphetamine dependent women who were concurrently enrolled in treatment as usual at the substance abuse treatment program at Van Buren /Cass County District Health Department. The results of this project provide some information that may aid in the development of effective and timely interventions for those struggling with substance abuse and other mental health problems, and explore integration of community-based programs with time-limited additional resources.

Individually, each participant (treatment completers and non-completers) demonstrated some improvements during the course of treatment, although the specific impact for each person was variable. There were also some differences in treatment response trends across the completers and non-completers, where data were available for both groups, which are noteworthy. All participants demonstrated some reduction on
their Global Severity Index on the BSI, while 2/3 had significant improvements. This finding offers support for H1, treatment facilitating a reduction in participants’ overall level of distress. All participants also made mild to significant decreases in their negative coping behaviors, and substance use coping behaviors, which offer support for H3. Notably, most treatment completers experienced a floor effect in their levels of improvement on the GSI, and COPE negative coping and substance use coping.

Treatment non-completers often demonstrated a larger margin of improvement (while in treatment) in these areas as compared to their pretreatment status (i.e., GSI and substance use coping were significantly different at pretreatment to the last available assessment), despite uncertain status after last contact with the therapist. Three of the five non-completers had contact with the therapist after their last session and reported that they had relapsed in their use and were struggling with repercussions (i.e., legal ramifications, housing problems, difficulty in key relationships and guilt related to returning to therapy). This anecdotal information speaks to the fact that most non-completers were unable to maintain treatment gains after discontinuing therapy.

Treatment completers were assessed more thoroughly at posttreatment, 1 month and 3 month FU. Results yielded that while there were individual variations across the four participants (i.e., limited improvements for C3 across some measures), there were numerous statistically significant comparisons across assessment measures that lend additional support for H2 (improved and more frequent use of effective or positive coping skills), H3 (reduced substance use, cravings to use, or other maladaptive coping strategies), and other ancillary outcome variables. Notably, all treatment completers no longer met criteria at post-treatment or 1- or 3-month FU assessment for any type of
substance abuse or dependence criteria. Also, among findings not previously mentioned, the Zanarani BPD interview, Drug Use Questionnaire, BDI-II, Toronto Alexithymia Scale – 20, and the Acceptance Action Questionnaire yielded significantly improved results at post-treatment, and 1- and 3-month FU as compared to pre-treatment. Likewise, significant improvements were made at post-treatment on the Emotion Regulation Questionnaire – reappraisal subscale and the KIMS “observe” subscale. Also, on the KIMS measure there were significant improvements on the “describe” scale at 1-month FU, “act with awareness” subscale at post-treatment / FU and 1-month FU, and the “acceptance without judgment” subscale at 1- and 3-month FU. Abstinence via self report and objective UA results was also maintained for completers during the course of treatment through 3 month FU, offering further support for H3. These results combined suggest notable and enduring changes (up to 3 months posttreatment) for those who completed the treatment protocol, lending further support for H1, H2, H3 and additional positive changes associated with treatment. These findings are also supported by participants’ verbal report of meaningful changes in their lives, as they indicated that over the course of treatment they were able to effectively implement various skills learned during the intervention.

Support for H4, treatment facilitating consistent attendance for DBT and TAU, is not conclusive. Attendance patterns were inconsistent for all participants. However, there is some support for this outcome noting that treatment completers finished all 12 DBT treatment sessions and successfully completed the TAU county substance abuse treatment program. Two completers were also released from their probationary status by the 3 month FU assessment period. However, each of the treatment completers were mandated
by probation requirements to complete the TAU county substance abuse treatment program. This additional requirement, which carried notable implications for participants if they were not compliant, is likely another additional factor in their completion status. Conversely, treatment non-completers did not finish the DBT treatment protocol and only one completed the TAU treatment program (this one treatment non-completer was also mandated by probation to complete the TAU county substance abuse program).

Moreover, support for H5 (those who regularly attended DBT sessions and completed homework would have better treatment outcomes than those who did not) cannot be fully assessed as information on treatment non-completers once they discontinued participation in the study is unavailable. Anecdotal information obtained through contact from a few non-completers at later dates does suggest more detrimental outcomes, which these participants indicated stemmed from continued substance use.

Overall, these data suggest that completing this treatment protocol for individuals with BPD symptomatology and MA dependence difficulties is moderately effective. These promising findings are somewhat consistent with previous outcome studies examining the efficacy of using modified DBT to treat BPD and substance use disorders (Dimeff et al., 2000; Linehan et al., 1999). Additionally, this type of assessment driven treatment may be an effective model to further develop efficacious treatments for various co-morbid problems often associated with substance use and dependence, which often impact the course of treatment (Leshner, 1999). Also, this study lends some support that the key aspects of DBT skills and approach can be effective without the intensive services that have historically been associated with treatment for some individuals (i.e., those with higher functioning in some areas).
Clinical observations. One observation during the course of treatment was repeatedly made with several of the non-completer participants. On several occasions, this group of participants struggled to apply their DBT skills in various key situations, despite self-reported valid attempts. This was often a central focus of sessions, in which therapist and participant discussed the struggles she was having (i.e., both validating the difficult situation and developing strategies to make new attempts). However, failed attempts often led to escalating emotional situations and increased chaos in the participant’s life, which ultimately led to more problematic situations. Conversely, the treatment completers often, but not always, were successful at implementing key skills at pivotal times, which often led to more manageable situations and reduced chaos in their lives. For each group of participants, their skillful, or unskillful behavior had a clear cumulative effect for future situations in which they would need to respond or cope with the situation.

Implementation in community settings. This pilot study demonstrates that implementation of an abbreviated DBT protocol into community based settings is possible, and suggests that it may also be useful for some. Most participants noted that the therapy protocol was very helpful to them because they felt it was 1) individualized, and 2) applicable to all aspects of their life, not just their past of using MA and other substances. Participants who completed treatment often commented on this latter aspect, noting they felt they were addressing numerous areas in their lives that have always been difficult for them. Also, substance abuse counselors at the health department stated they often were overwhelmed by the multi-faceted and complex problems areas participants brought into their sessions, noting limited time to focus on diverse problem areas. Several
counselors noted having additional, more comprehensive services was very useful for
them and for participants, noting marked differences among several participants
(completers and non-completers) during their involvement with the protocol.

Considerations and Limitations

Of the nine participants that initiated treatment, five discontinued services at
various times during the treatment sessions, resulting in a 55.6% attrition rate. Although
seemingly high, this rate is consistent with attrition rates for treatment outcomes for
However, previous studies that implemented DBT for substance abuse difficulties
experienced slightly lower attrition rates. For example, Dimeff et al. (2000) and Linehan
et al. (1999) had 33% and 36% attrition rates respectively for those participating in DBT
to address substance use problems; however Linehan et al. (1999) reports that their TAU
comparison group had a 73% attrition rate during the same time period. Overall,
participants had some notable differences that were evident at pretreatment which may
have impacted their completion status. For example, completers were concurrently
enrolled in probation-mandated treatment, served longer periods of time in jail, were
using fewer substances to cope with stressors, had increased acceptance skills, and
demonstrated a healthier level of overall psychological well-being.

However, several pertinent psychosocial factors that occurred during the course of
treatment for some treatment non-completers should also be noted due to their impact on
treatment feasibility. For example, one non-completing participant had started a new part
time job and was the primary care-giver for her mother, who was diagnosed with cancer
and needing close medical care and attention. Per participant's self report, her time
constraints were a notable factor in discontinuing treatment. Another two participants did not have a driver’s license or a vehicle, which was an ongoing difficulty in making appointments. One participant was involved in severe domestic violence with a romantic partner that resulted in brief hospitalization, housing problems and legal involvement. Overall, three of the five non-completers had reported that they relapsed and were dealing with repercussions that involved legal ramifications, housing concerns, and increased discord in their personal relationships. Two of the three that had relapsed noted that they were also experiencing emotional distress (i.e., guilt, shame, and confusion) about returning to DBT therapy. Despite scheduling appointments and speaking to their therapist via phone, neither participant returned for ongoing treatment. One enrolled in a year-long substance abuse treatment program after urging from her family. These complex psychosocial factors need to be considered and evaluated in the context of treatment (i.e., as they increase the likelihood of relapse and emotional dysregulation) and may warrant additional services for basic needs.

Nevertheless, one notable and significant psychosocial difference between groups that may have impacted treatment response was the presence of drug related legal problems. These legal charges created a different experience for the treatment completers and N5, in the fact that they each had spent considerable time in jail, which foremost prevented them from using any substances for 1-3 months, a critical period for experiencing withdrawal symptoms. Also, their incarceration experiences may have provided increased motivation for behavior change, in addition to requiring mandated substance abuse treatment while incarcerated and immediately after release through county services.
One or several of the aforementioned factors may have laid the groundwork for likely success rates or poorer outcomes for each group of women respectively. These factors suggest that although this treatment protocol may be useful for some women with similar problems, there are various aspects that need to be further investigated to evaluate which variables may indicate or contraindicate treatment success.

It is unclear whether the current protocol can accommodate or effectively impact a more severe symptom presentation or more severe psychopathology (i.e., in addition to the MA dependence and BPD features), as Hiller et al., (1999) also found that higher psychopathology was suggestive of higher attrition rates and poorer outcomes. First, given the attrition rates among those women who had used MA or other illicit substances more recently or during therapy, this treatment protocol may not be the best fit, as these participants may warrant more intensive services, such as a traditional DBT treatment protocol or an inpatient setting. Secondly, data from C3 begs additional questions related to the treatment of more severe psychopathology (i.e., severe depression). This participant struggled during the course of treatment with notable depressive symptoms that were targeted during the course of treatment, but were not the only goals for intervention. Further investigation is needed to better identify those with more severe psychopathology who may not be best served by this treatment protocol.

Another concern related to the findings of this study relates to the exploratory group analyses that were conducted. Although findings should be interpreted with caution, as there are violations of power, differences at the individual level are apparent as well.
Summation and Future Research

Overall, the findings of this study suggest that an abbreviated version of DBT that is adapted to substance use and dependence issues can be moderately effective for women with BPD features and MA dependence who demonstrate persistent attempts for change and mild to moderate (i.e., non-severe) symptoms of psychopathology and/or adjustment. This adapted and abbreviated treatment protocol warrants further investigation in larger group designs and with long-term follow up in order to determine overall efficacy, mechanisms of action, likely types of treatment responders, and retention of treatment gains. Also, a worthy empirical question addressing increased efficacy or treatment retention should be addressed within the current model by adding more availability for telephone consultation for participants, which was not a viable option for this pilot project. Other studies could also explore relevant criteria for identifying those that likely will not succeed in an abbreviated DBT protocol, and therefore could potentially be placed into a more intensive or traditional DBT treatment program.

Additionally, this protocol could be expanded into several other areas for further investigation. For example, it is unclear if treatment gains will be stable or transient for the treatment completers, where more data could be collected with larger samples and longer follow up. Also, further investigation is warranted to identify which specific aspects of treatment were essential mechanisms of action for improvements that were seen across some participants. Also, other types of substance use and dependence problems among various populations may be an appropriate application for this shortened treatment protocol in settings where there are time and budgetary constraints. Another area for future research includes empirical trials using this abbreviated DBT model,
without the adaptations for substance difficulties, with persons who display BPD features to determine if, and for whom, this protocol would be effective. Given the ongoing struggles in several community-based settings where therapy needs to be time limited, yet effective, the potential for successfully treating those with BPD symptoms using an abbreviated protocol warrants further discussion and empirical investigation.
REFERENCES


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Appendix A
Oral Recruitment Script
"Hi, my name is Jess and I am a student investigator from Western Michigan University. I’m recruiting potential female participants for a treatment-based research project called ‘Treatment of Co-morbid Methamphetamine Abuse and Borderline Personality Disorder Features Using Modified Dialectical Behavior Therapy’. This treatment study is for women with a history of substance abuse problems and is designed to help achieve and maintain abstinence by teaching effective coping skills. We are investigating whether this treatment is effective in reducing substance use and increasing more adaptive ways to manage distress.

Should you agree to participate in this study, you first will be asked to attend two assessment sessions. During these two sessions you will complete a total of 4 short interviews with the student investigator or research assistant to assess for substance use, and other criteria related to participation. You will also be asked to complete a demographic questionnaire and other measures to assess how you cope with stressful situations, your level of distress, how you respond to opportunities to use, and perceptions of how you think and feel about yourself. Disclosing personal information during these first 2 sessions may be upsetting or make you somewhat uncomfortable. If you begin to feel upset or uncomfortable while filling out the questionnaires or answering questions, you are free to not answer any particular question, or to stop participating in this study at any time without penalty.

If you are eligible and agree to participate, you will be asked to take home and fill out 2 questionnaires every 4 days of the course of 4 to 16 days. You will complete these 2 questionnaires anywhere between 1 and 4 times. Each time will take only 10 -15 minutes. This is necessary to see what difficulties you are having before treatment begins so that we can see if the treatment is helpful in addressing these problems.

Once we get this baseline information, the active therapy will begin. You will be asked to attend 12 therapy sessions over the course of 10 weeks. The goal of the active treatment is to help you develop new skills to abstain from substances and manage distress and emotions in healthier ways. During active treatment, you will be asked discuss your actions, thoughts and feelings, and how you typically cope with difficult or upsetting situations. You will also learn new skills to facilitate more adaptive coping skills, complete short activities outside of session, and complete weekly tracking sheets for continued treatment evaluation and skill development. Once the therapy is completed, you will be asked to attend 3 additional assessment sessions. One will occur immediately following the end of treatment and the other two will occur at one and three months after therapy has ended. All assessment and treatment sessions will be held in the health department office in Paw Paw.

As in all research, there may be risks to the participant, where appropriate emergency measures will be taken should you experience severe psychological distress. The researcher is a trained therapist prepared to provide crisis counseling should you become significantly upset during sessions, or to make a referral if you need further counseling. Another risk of participating in this research is the inconvenience of time and effort involved. One way in which you may benefit from this study is to reduce your cravings and emotional vulnerability to using substances. Research has shown this treatment can improve abstinence and reduce emotional dysregulation. Other benefits of participation include compensation for your time completing assessment measures, in addition to access to free transportation or reimbursement for transportation costs. Also, participants may be eligible for funding to pay for a childcare provider for their children during session. Lastly, if you successfully complete this treatment program without incurring any additional probation violations with Van Buren or Cass counties, a letter will then be drafted on your behalf by the student investigator, commenting on your willingness, efforts and diligence to comply with the treatment protocol and ultimately complete this program. This information will be considered by your treatment team in determining your completion date of your current substance abuse program.

You are not required to participate in this treatment study. You may refuse to participate, quit at any time during the study for any reason or refuse to answer any question without prejudice or penalty. Your decision about whether or not to participate will not jeopardize your current or future relations with Western Michigan University or services provided at Van Buren / Cass Health Department in any way. If you have further questions about this treatment study or are interested in learning more about participating please contact Jess at (269) 352-4451."
Appendix B
Recruitment Flyer
Female Participants Needed for Treatment Study!

‘Treatment of Co-morbid Methamphetamine Abuse and Borderline Personality Disorder Features Using Modified Dialectical Behavior Therapy’

We are looking for female volunteers to participate in a treatment study for individuals struggling with substance abuse problems. If you have a history of drug use and experience difficulty with managing how you feel and how you cope with difficult situations, you may be eligible for participation in this treatment study.

We are investigating the effectiveness of a time-limited treatment that is designed to help achieve and maintain abstinence by using effective coping skills that promote adaptive ways to manage stress and difficult situations.

Participants in this study will be asked to attend two assessment sessions followed by 12 individual therapy sessions. During the therapy sessions you will discuss your actions, thoughts and feelings, and how you cope with difficult or distressing situations. You will also be taught new skills to facilitate more effective coping strategies, complete short activities outside of session, and complete weekly tracking sheets. Following the completion of therapy, you will also be asked to attend three post-treatment assessment sessions immediately following the 12 session treatment, as well as 1 month and 3 months after the therapy has ended.

Although there is some risk (i.e., such as psychological distress when disclosing personal information and working to create change) and inconvenience (i.e., time and effort) involved with participation, there may be benefits. You may be able to reduce your cravings and emotional vulnerability to using substances as well as learn other effective life skills. Participants in this study will be compensated for the time spent completing assessment procedures, as well as for transportation and childcare costs.

If you are interested in learning more about this treatment study

Please contact Jess Schultz:

(269) 352-4451
Western Michigan University  
Department of Psychology

“Treatment of Co-morbid Methamphetamine Abuse and Borderline Personality Disorder Features Using Modified Dialectical Behavior Therapy”

Principal Investigator: Amy E. Naugle, Ph.D.  
Student Investigator: Jessica R. Schultz, M.A.

You have been invited to participate in a research project entitled "Treatment of Co-morbid Methamphetamine Abuse and Borderline Personality Disorder Features Using Modified Dialectical Behavior Therapy." This study is intended to help us learn more about a treatment designed to achieve and maintain abstinence by using more effective coping skills. The goal of this treatment study is to help clients substitute substance use with more adaptive ways to manage distress. Additionally, this project will collect assessment information from participants to help us learn whether the treatment is effective. This treatment study is Jessica Schultz's dissertation project and is supervised by Dr. Amy Naugle.

**WHAT IS INVOLVED?**

**Assessment Sessions.** Should you agree to participate in this study, you will be asked to attend two sessions lasting approximately 90 minutes to 2 hours each. During these sessions you will be completing a number of different assessment procedures. The first assessment session will begin today and will involve three interviews with the student investigator or research assistant that will help to determine your eligibility for the treatment study. During these interviews you will be asked about your substance use as well as about features of your personality and the way you typically deal with different situations. You may become upset or uncomfortable answering some of the questions and there may also be some level of distress as you disclose personal information. You will be asked to complete several questionnaires focused on personal information such as age, racial identity, and income, as well as information about how you cope with stressful situations, and current psychological symptoms you may be experiencing. Following this assessment session, you will be asked to provide contact information so that we know the best way to get in touch with you. You will also be asked to schedule the second assessment session for sometime within the next week.

During the second assessment session, you will be asked to complete several more questionnaires about how you cope with stressful situations, your current level of distress, how you respond to opportunities to use substances, and perceptions of how you think and feel about yourself. Should you begin to feel upset or uncomfortable while filling out the questionnaires or answering questions during the interviews, you are free to not answer any particular question. You are also free to completely stop participating in this study for any reason at any time without penalty, and without repercussions from your concurrent treatment at VBCCDHD or your probation status.

At the end of the second assessment session, you will be notified if you are eligible to participate in the active treatment phase of the project. If you are eligible and agree to participate, you will be asked to take home and fill out 2 questionnaires every 4 days of the course of 4 to 16 days. You will complete these 2 questionnaires anywhere...
between 1 and 4 times. Each time will take only 10-15 minutes. This is necessary to see what difficulties you are having before treatment begins so that we can see if the treatment is helpful in addressing these problems. Once we get this baseline information, the active therapy will begin. If you do not qualify for the treatment phase of the study, you will be given a therapist referral list, which includes some locations that offer reduced-fee or free services, including a 24-hour support number.

**Treatment Sessions.** You will be asked to attend 12 therapy sessions lasting 90 minutes each over the course of 10 weeks. These therapy sessions will be audio taped. The goal of the active treatment is to help you develop new skills to abstain from substances and manage distress and emotions in healthier ways. During active treatment, you will be asked discuss your actions, thoughts and feelings, and how you typically cope with difficult or upsetting situations. You will also learn new skills to facilitate more adaptive coping skills, complete short activities outside of session, and complete weekly tracking sheets for continued treatment evaluation and skill development. If you choose not to participate in this research study, you may receive similar treatment for maintaining abstinence from Van Buren / Cass District Health Department, or for treating features of BPD at the WMU Psychology Clinic or from other community resource.

There are treatments available for substance use and BPD other than the one offered in this study. If you should choose to pursue treatment elsewhere, the researcher will provide you with a list of referrals.

Once the therapy is completed, you will be asked to attend 3 additional assessment sessions. One will occur immediately following the end of treatment and the other two will occur at one and three months after therapy has ended. All assessment and treatment sessions will be held in the health department office in Paw Paw.

As part of your participation in this study, you will be asked to allow the investigators to access information from VBCCDHD about the results of any urinalyses that are a part of your probation conditions, and your attendance record for the mandated substance abuse program for the duration of this study, in addition for the past 60 days prior to today.

**Potential Benefits to Participating in This Treatment Study**

One way in which you may benefit from this study is to reduce your cravings and emotional vulnerability to using substances. In addition, you may learn more effective strategies for coping with difficult feelings and for handling stressful situations. Research has shown this treatment can improve abstinence and reduce emotional dysregulation. Furthermore, others who experience similar symptoms to yours may benefit from the knowledge that is gained from this research. Once the study is completed, you may receive a general summary of results if you wish by calling (269) 387-4485.

**Potential Risks to Participating in This Treatment Study**

As in all research, there may be unforeseen risks to the participant. Appropriate emergency measures will be taken should you experience severe psychological distress; however, no compensation or additional treatment services will be made available to you except as otherwise specified in this consent form. One potential risk of your participation in this project is that you may experience some discomfort disclosing personal information during assessment or discussing your thoughts, feelings and actions during active treatment. However, these risks are no different from typical psychotherapy.
procedures and are understandable considering the treatment is designed to address achieving and maintaining abstinence by initiating personal changes. The researcher is a trained therapist prepared to provide crisis counseling should you become significantly upset during assessment or treatment, or to make a referral if you need further counseling. You will be responsible for the cost of additional therapy if you choose to pursue it.

Another risk of participating in this research is the inconvenience of time and effort involved. Participants will be attending weekly sessions for assessment and treatment for several weeks, in addition to completing exercises outside of therapy. These time commitments may pose a nuisance. One additional inconvenience involved with participation, involves a condition for participation. The investigator will receive weekly information about the results of any urinalyses that are part of your probation conditions, and your attendance record for the mandated substance abuse program from VBCCDHD.

**Compensation and Incentives for Participating in This Treatment Study**

If you choose to participate in this treatment study, you will be compensated financially for the time it takes you to complete assessment procedures. This compensation will occur in the form of gift cards to local merchants ($20.00 per assessment sessions and $5.00 per treatment sessions) in order to ease the burden of time commitments to this project. Additionally, you will be provided with access to free public transportation for all sessions should you need it. This service will be coordinated by the student investigator and VBCCDHD. If you choose to use your own transportation, you will be reimbursed with gas vouchers ($5.00 per session). Also, if you have children under the age of 16 who are living with you, a check will be made out to your designated childcare provider to help ease the cost of caring for young children during sessions. Lastly, if you successfully complete this treatment program (i.e., attending all sessions and completing assignments) without incurring any additional probation violations with Van Buren or Cass counties, the VBC county substance abuse director will be notified of your successful completion of the program. A letter will then be drafted by the student investigator, commenting on your willingness, efforts and diligence to comply with the treatment protocol and ultimately complete this program. This information will be considered by your Van Buren Cass County treatment team in determining your completion date of your current substance abuse program.

**Confidentiality of Information and Data**

Your responses and performance in this treatment study will remain strictly confidential. That means that your name will not appear on any of the questionnaires or other forms used to record information during this study. The only document that will have your name on it will be this consent form and a contact information sheet that will allow us to get in touch with you to schedule appointments. All forms and computer files with information regarding you and your information will be coded with a unique number in order to ensure confidentiality. Ms. Schultz will be audiotaping all therapy sessions. Your code number will also be used to label these audiotapes. A trained graduate student will review some of your therapy sessions in order to rate whether the therapist is conducting the session properly. Once the tapes have been reviewed and rated they will be destroyed. All other written information will be kept in the principal investigator’s lab in a locked file cabinet for at least 3 years. You will not be personally identified in any reports or publications that may result from this study.
What you share during the assessment and treatment sessions also will be kept confidential and will not be communicated to any other professionals, including the staff at the VBCCDHD without your explicit written permission. The only exception to this is that by participating in this study, you agree to allow the investigators to inform Dr. Dave Fatzinger that you have enrolled in the project and also to inform him of your termination from or successful completion of the program. No other details will be provided. This specifically means that we will not provide any information regarding your substance use should we become aware of it during your participation in the study. Also, as a participant in this study, you will not be subject to any additional urinalyses beyond what is already required as part of your current probation.

There is some information that legally cannot be kept confidential. If you share information during this treatment study that indicates that you are in danger or harming yourself or another person, that information must be reported to the proper authorities. Likewise, if you share information regarding suspected or actual abuse or neglect of a child currently under the age of 18 or of an elder or vulnerable adult, that information must also be reported.

CONFIDENTIALITY OF INFORMATION AND DATA

Your participation in this treatment study is completely voluntary. You may withdraw from this study at any time without any negative effect on services provided to you. There will be no penalty if you do not wish to be involved in this treatment study, and you may withdraw at any time during the study and refuse to answer any of the questions. Your decision on whether or not to participate in this study will not jeopardize your future relations with Western Michigan University, the Van Buren / Cass District Health Department or your probationary status.

QUESTIONS

We invite you to ask any questions you may have. If you have any additional questions or concerns about this study, please feel free to contact Jessica Schultz at 269-387-4485 or Dr. Amy Naugle at 269-387-4726. We will be happy to answer any of your questions. You may also contact the chair of Human Subjects Institutional Review Board at 269-387-8293 or the vice president for research at 269-387-8298 with any questions or problems that arise during this study. You will be given a copy of this form to keep for your records.

This consent document has been approved for use for one year by the Human Subjects Institutional Review Board as indicated by the stamped date and signature of the board chair in the upper right corner. Do not participate in this study if the stamped date is older than one year. Your signature below indicates that you have read and/or had explained to you the purpose and requirements of the study and that you agree to participate.

________________________________________     ____________________
Signature of participant                        Date

Consent obtained by: __________________________     ____________________
Initials of researcher                          Date

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Appendix D
Release of Information Form
Release of Information Form

This document states that I, ________________________________ (participant) agree for a release of information from (___________________________ investigator) to Van Buren / Cass County District Health Department to notify them that I am enrolled in this treatment program. I also agree for VBCCDHD to release specific information (1: results from my weekly or random urinalysis testing, 2: my attendance from the weekly mandated substance abuse treatment that they are currently providing on a weekly basis, 3: number days I’ve spent in jail) to (___________________________ investigator) one time per week. In addition, I grant VBCCDHD permission to release the previously stated information to the investigator from the past 60 days, prior to today.

- Additionally, I grant (____________________ investigator) permission to contact my current medical doctor (____________________) of (____________________ location & ______________________ phone number) to confirm the type, dose and duration of the psychiatric medication that s/he has been prescribing me.

- Additionally, I DO NOT grant (____________________ investigator) permission to contact my current medical doctor that has been prescribing psychiatric medications I am currently taking.

- Additionally, I am not currently taking any prescribed medications for psychiatric reasons.

This agreement is only valid for the following dates:

Start date: __________________________________________ End date: __________________________________________

I agree to the above stated release of information.

Participant Signature ___________________________ Date ________________

Witness / Investigator Signature ___________________________ Date ________________
Appendix E
Assessment Materials
Exclusion Criteria Screening

Please monitor for the following symptoms during the initial assessment interview. Check which symptoms of psychosis and mania are indicated and follow up with appropriate questioning.

**Psychosis**
- [ ] Not oriented to date
- [ ] Not oriented to place
- [ ] Paranoid
- [ ] Disorganized speech
- [ ] Delusions or hallucinations

Presence of Psychosis: YES / NO

**Mania**
- [ ] Inflated self-esteem or grandiosity
- [ ] Pressured speech
- [ ] Flight of ideas
- [ ] Distractible
- [ ] Psychomotor agitation

Presence of Mania: YES / NO

"I'm going to ask you some questions about psychological and health-related issues."

1. Are you currently hearing voices?

2. Do you currently think someone is out to get you?

3. Are you currently having thoughts of hurting someone else?

4. Are you currently having thoughts of hurting yourself?

Yes [ ]  No [ ]

Intensity of thoughts:

Specificity of plan:

Self-control:

Intent:

Hx of suicide attempts:

- [ ] Non-existent  
- [ ] Mild  
- [ ] Moderate  
- [ ] Severe

Is the person eligible for participation in the study based on exclusion criteria?

[ ] YES  
[ ] NO

- If eligibility for the current study is unclear, engage in follow-up questions with the participant in order to clarify participant standing. Please record questions and response on the back of this sheet for documentation.

- If the person qualifies for participation in the study, please continue with the assessment.

- If the person does not qualify for participation in the study, please explain why and follow up with appropriate referrals.
Demographic Information Questionnaire

DIRECTIONS: For each question below either circle the response that best describes you or fill in the appropriate blank.

1. What is your age? _______ years

2. What is your relationship status?
   1 Single and NOT involved in a dating relationship
   2 Single and currently dating / in a relationship or Engaged
   3 Living with a committed partner
   4 Married
   5 Separated / Divorced
   6 Widowed

3. How many children do you have? _______
   Do they live with you? Y or N
   Please list their ages: ________________________

4. What best describes your race / ethnicity?
   1 Asian / Pacific Islander
   2 African American
   3 Hispanic / Latino
   4 Native American
   5 White / Caucasian
   6 Other

5. What best describes your occupation?
   1 Professional / Technical
   2 Management
   3 Sales / Marketing
   4 Clerical / Service Worker
   5 Trades / Laborer / Machine Operator
   6 Full-time Homemaker
   7 Retired
   8 Full-Time Student
   9 Unemployed
   10 Disabled

6. What is your religion?
   1 Catholic
   2 Protestant / Lutheran
   3 Jewish
   4 Other: ________________________
   5 None

7. What is your current yearly income?
   1 $15,000 or less
   2 $15,001 - $25,000
   3 $25,001 - $35,000
   4 $35,001 - $50,000
   5 Over $50,000

8. Which of the terms listed below would you say best describes how you think of yourself?
   1 Heterosexual, straight
   2 Homosexual, gay, lesbian
   3 Bisexual
   4 Other

9. Have you ever seen a counselor, therapist, psychologist, or psychiatrist for personal concerns?
   1 No - You are now done with the survey
   2 Yes
10. If yes, estimate the total number of sessions of therapy or counseling you have participated in during your entire life with both past and current counselors, therapists, psychologists, or psychiatrists?
   1  1-4 sessions
   2  5-10 sessions
   3  11-20 sessions
   4  21-50 sessions
   5  More than 50 sessions

11. Are you currently seeing a counselor, therapist, psychologist, or psychiatrist for personal concerns?
   1  No – Please skip to number 15
   2  Yes

12. If yes, what type(s) of therapy are you currently participating in (mark as many as apply)?
   1  Individual therapy
   2  Group therapy
   3  Couples/marital therapy
   4  Outpatient substance abuse treatment
   5  Alcohol Anonymous and/or Narcotics Anonymous
   6  Other (specify) ________________________________

13. If you are currently in therapy, how many sessions have you had with your current counselor, therapist, psychologist, or psychiatrist?
   1  1-4 sessions
   2  5-10 sessions
   3  11-20 sessions
   4  21-50 sessions
   5  More than 50 sessions

14. If you are currently in therapy, please indicate which personal concerns led you to seek counseling/therapy at this time?
   [8] Alcohol or drug problems  [16] Other: ____________________________

15. Are you currently taking medication for psychiatric reasons? (circle) Yes  No
   If yes, what kind? __________________ Dose? _______ For how long? ______________
   __________________ Dose? _______ For how long? ______________
   __________________ Dose? _______ For how long? ______________
   __________________ Dose? _______ For how long? ______________

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COPE Inventory

There are lots of ways to try to deal with stress. Respond to the following questions, indicating what you generally do & feel, when you experience difficult or stressful events. Different events bring out somewhat different responses, but think about what you usually do when you are under a lot of stress. Choose your answers thoughtfully, and make your answers as true FOR YOU as you can. Please answer every item. There are no "right" or "wrong" answers, so choose the most accurate answer for YOU—not what you think "most people" would say or do. Indicate what YOU usually do when YOU experience a stressful event.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>I usually don't do this at all</td>
<td>I usually do this a little bit</td>
<td>I usually do this a medium amount</td>
<td>I usually do this a lot</td>
</tr>
</tbody>
</table>

1. I try to grow as a person as a result of the experience.
2. I get upset and let my emotions out.
3. I try to get advice from someone about what to do.
4. I concentrate my efforts on doing something about it.
5. I say to myself "this isn't real."
6. I admit to myself that I can't deal with it, and quit trying.
7. I restrain myself from doing anything too quickly.
8. I discuss my feelings with someone.
9. I use alcohol or drugs to make myself feel better.
10. I get used to the idea that it happened.
11. I talk to someone to find out more about the situation.
12. I get upset, and am really aware of it.
13. I make a plan of action.
14. I accept that this has happened and that it can't be changed.
15. I hold off doing anything about it until the situation permits.
16. I try to get emotional support from friends or relatives.
17. I just give up trying to reach my goal.
18. I take additional action to try to get rid of the problem.
19. I try to lose myself for a while by drinking alcohol or taking drugs.
20. I refuse to believe that it has happened.

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<th>2</th>
<th>3</th>
<th>4</th>
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</thead>
<tbody>
<tr>
<td>21</td>
<td>I usually don't do this at all</td>
<td>I usually do this a little bit</td>
<td>I usually do this a medium amount</td>
<td>I usually do this a lot</td>
</tr>
<tr>
<td>22</td>
<td>I let my feelings out.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>I try to see it in a different light, to make it seem more positive.</td>
<td></td>
<td></td>
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<tr>
<td>24</td>
<td>I talk to someone who could do something concrete about the problem.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>25</td>
<td>I try to come up with a strategy about what to do.</td>
<td></td>
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<tr>
<td>26</td>
<td>I get sympathy and understanding from someone.</td>
<td></td>
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<tr>
<td>27</td>
<td>I drink alcohol or take drugs, in order to think about it less.</td>
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<td>28</td>
<td>I give up the attempt to get what I want.</td>
<td></td>
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<td></td>
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<tr>
<td>29</td>
<td>I look for something good in what is happening.</td>
<td></td>
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<tr>
<td>30</td>
<td>I think about how I might best handle the problem.</td>
<td></td>
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<tr>
<td>31</td>
<td>I pretend that it hasn't really happened.</td>
<td></td>
<td></td>
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<tr>
<td>32</td>
<td>I make sure not to make matters worse by acting too soon.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>I accept the reality of the fact that it happened.</td>
<td></td>
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<tr>
<td>34</td>
<td>I feel a lot of emotional distress and I find myself expressing those feelings a lot.</td>
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<td>35</td>
<td>I take direct action to get around the problem.</td>
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<td>36</td>
<td>I force myself to wait for the right time to do something.</td>
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<td>37</td>
<td>I reduce the amount of effort I'm putting into solving the problem.</td>
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<td>38</td>
<td>I talk to someone about how I feel.</td>
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<tr>
<td>39</td>
<td>I use alcohol or drugs to help me get through it.</td>
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<td>40</td>
<td>I learn to live with it.</td>
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<td>41</td>
<td>I think hard about what steps to take.</td>
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<tr>
<td>42</td>
<td>I act as though it hasn't even happened.</td>
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<tr>
<td>43</td>
<td>I do what has to be done, one step at a time.</td>
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<tr>
<td>44</td>
<td>I learn something from the experience.</td>
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Substance Abuse Risk Response Test Situations  
(Adapted from the CRRT - Carroll 1999)

DIRECTIONS: Start the tape recorder before beginning this assessment! Say “I am going to be reading a set of scenarios that I want you to imagine yourself in. Please respond to the scenario as if it were happening right now, then state your response when I prompt you by saying ‘what do you do?’. Also remember there is no right or wrong answer, only your thoughts about what you feel you would do in each situation”. Allow the participant to offer more than one solution, but do not prompt her to continue thinking of ideas. Read the scenarios to the participant, and then stop the recoding once she has finished responding to the last scenario.

1. It's been a very difficult week at work, but now it's Friday afternoon and you just got your paycheck. You usually used meth on Fridays and you start feeling like you'd like to use. You start experiencing some very intense cravings for meth and find yourself telling yourself that you deserve a reward after such hard work. What do you do?

2. You are at a party with several good friends. There's lots of alcohol, food, and music. Everybody seems to be having a good time. You didn't think meth would be available there, but you start noticing people using meth in the next room. What do you do?

3. Nothing seems to be going right for you lately, and you've been feeling quite depressed for the last few weeks. Things don't seem to be getting better; you can't see anything to look forward to and you've got no energy. What do you do?

4. Things are really going great—you just got a promotion, things are really going well at home, and you're doing well financially for a change. Because you feel like celebrating, you think about getting some meth and having a party. What do you do?

5. The week went by really slowly, but you didn't make plans for the weekend. You're sitting home feeling really bored. What do you do?
Drug Use Functional Analysis Screening Tool (DUFAST)
Matthew Cole & Marilyn Bonem - Eastern Michigan University

The following survey will help you identify situations or events in which you have been using alcohol or other drugs. This includes thoughts, feelings, or behaviors that precede or follow your using. When you are finished with this survey, you will have a better understanding as to: Why are you using? What function does using serve? What events in your life are making it easier for you to believe that using is acceptable? What else can you do besides using? Before you begin this survey, please complete the following initial questions. If an item is not applicable, check “never.” Please skip any items that you do not want to respond to.

1. What drug (including alcohol) are your ratings related to?

2. Approximately how much of the drug do you using on a daily basis (e.g., “2 beers, 7 times per week”)

3. Who are you usually with when you use?
   ( ) partner ( ) mother ( ) father ( ) friends
   ( ) sibling ( ) children ( ) alone ( ) roommate

4. Where do you usually use?

5. When do you usually use?

<table>
<thead>
<tr>
<th>Questions</th>
<th>Never</th>
<th>Almost Never</th>
<th>Seldom</th>
<th>Half the Time</th>
<th>Usually</th>
<th>Almost Always</th>
<th>Always</th>
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</thead>
<tbody>
<tr>
<td>1. I use on the weekends</td>
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<td>2. I use before work/school</td>
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<td>3. I use in the morning</td>
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<td>4. I use in the middle of the day/lunchtime</td>
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<td>5. I use after work/school</td>
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<td>6. I use in the evening</td>
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<td>7. I use when I am in a setting where I have used in the past (i.e., bar, kitchen)</td>
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<td>8. I use with other who are also using</td>
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<td>9. I use when I am alone</td>
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<td>10. I use when this drug is offered to me</td>
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<td>11. I use when I have homework/study for school</td>
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<td>12. I use before I want to have sex</td>
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<td>13. I use after sex</td>
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<tr>
<td>Questions</td>
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<td>14. I use when I have to, or am asked to do something</td>
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<td>15. I use after I have seen this drug (i.e., on TV, in a bar)</td>
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<td>16. I use after I have seen the setting where I normally use</td>
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<td>17. I use after I was told to do something</td>
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<td>18. I use after I see others use</td>
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<td>19. I use after a fight with partner/friends</td>
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<td>20. I use after meals/snacks</td>
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<td>21. I use during meals</td>
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<td>22. I use after a stressful day at work/school</td>
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<td>23. I use when I don’t have a job</td>
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<td>24. I use when I don’t have enough money</td>
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<td>25. I use when I want to do better at work/school</td>
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<td>26. I use when I am not happy at work/school</td>
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<td>27. I use when I have legal problems (i.e., DUI)</td>
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<td>28. I use when I feel unmotivated</td>
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<td>29. I use when I can’t relax</td>
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<td>30. I use when I can’t fall asleep</td>
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<td>31. I use when I feel bored or lonely</td>
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<td>32. I use when I feel cravings/urges to use</td>
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<td>33. I use when I feel I need energy</td>
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<td>34. I use when I have a headache</td>
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<td>35. I use when I feel angry</td>
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<td>36. I use when I feel depressed</td>
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<td>37. I use when I feel anxiety or stress</td>
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<td>38. I use when I feel worried</td>
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<td>39. I use when I feel happy or want to celebrate</td>
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<td>40. I use when I dream about using</td>
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<td>41. I feel relaxed after using</td>
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<td>42. I’m not angry after I use</td>
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<td>43. Overall, I think I feel better after I use</td>
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<td>44. I deal with stress better after I use</td>
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<td>45. I feel more confident after I use</td>
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<td>Questions</td>
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<td>46. It's easier to talk to family/friends after I use</td>
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<td>47. It's easier to talk to my partner after I use</td>
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<td>48. Sex feels better after I use</td>
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<td>49. My cravings/urges go away after I use</td>
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<td>50. I feel less anxious after I use</td>
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<td>51. I feel energized after I use</td>
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<td>52. I feel more motivated after I use</td>
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<td>53. I feel euphoria after I use</td>
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<td>54. I feel my heart rate increase after I use</td>
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<td>55. I feel nauseous after I use</td>
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<td>56. I get a headache after I use</td>
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<td>57. I get lazy and procrastinate after I use</td>
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<td>58. I don't do my homework/studying after I use</td>
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<td>59. I don't do work around the house after I use</td>
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<td>60. I got arrested/DUI/ or had other legal problems after I use</td>
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<td>61. I become aggressive/hostile after I use</td>
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<td>62. I use too much (i.e., blackout, stomachache)</td>
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<td>63. I lie to cover up my using</td>
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<td>64. I steal money in order to use</td>
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<td>65. I crave to use more once I start to use</td>
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<td>66. I can't stop using once I start to use</td>
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<td>67. I feel depressed/upset with myself after I use</td>
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<td>68. I drop out of school/quit my job when I use</td>
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<td>69. I get thrown out of school/lose my job when I use</td>
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<td>70. I like to get outdoors to camp, hike, etc.</td>
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<td>71. I want to get a new job</td>
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<td>72. I want to go to a new school</td>
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<td>73. I want to learn how to relax</td>
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<td>74. I want to reduce my use of this drug</td>
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<td>75. I want to learn a new hobby or interest</td>
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Emotion Regulation Questionnaire (ERQ)

We would like to ask you some questions about your emotional life, in particular, how you control (that is, regulate and manage) your emotions. We are interested in two aspects of your emotional life. One is your emotional experience, or what you feel like inside. The other is your emotional expression, or how you show your emotions in the way you talk, gesture, or behave. Although some of the following questions may seem similar to one another, they differ in important ways.

For each item, please answer using the following scale:

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<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Neutral</td>
<td>Strongly Agree</td>
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1. ___ When I want to feel more positive emotion (such as joy or amusement), I change what I’m thinking about.

2. ___ I keep my emotions to myself.

3. ___ When I want to feel less negative emotion (such as sadness or anger), I change what I’m thinking about.

4. ___ When I am feeling positive emotions, I am careful not to express them.

5. ___ When I’m faced with a stressful situation, I make myself think about it in a way that helps me stay calm.

6. ___ I control my emotions by not expressing them.

7. ___ When I want to feel more positive emotion, I change the way I’m thinking about the situation.

8. ___ I control my emotions by changing the way I think about the situation I’m in.

9. ___ When I am feeling negative emotions, I make sure not to express them.

10. ___ When I want to feel less negative emotion, I change the way I’m thinking about the situation.
TAS - 20

DIRECTIONS: Using the scale provided as a guide, indicate how much you agree or disagree with each statement.

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<thead>
<tr>
<th></th>
<th>1</th>
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<tbody>
<tr>
<td></td>
<td>Strongly Disagree</td>
<td>Moderately Disagree</td>
<td>Neither Agree nor Disagree</td>
<td>Moderately Agree</td>
<td>Strongly Agree</td>
</tr>
</tbody>
</table>

1. I am often confused about what emotion I am feeling. 1 2 3 4 5
2. It is difficult for me to find the right words for my feelings. 1 2 3 4 5
3. I have physical sensations that even doctors don’t understand. 1 2 3 4 5
4. I am able to describe my feelings easily. 1 2 3 4 5
5. I prefer to analyze problems rather than just describe them. 1 2 3 4 5
6. When I am upset, I don’t know if I am sad, frightened, or angry. 1 2 3 4 5
7. I am often puzzled by sensations in my body. 1 2 3 4 5
8. I prefer to just let things happen rather than to understand why they turned out that way. 1 2 3 4 5
9. I have feelings that I can’t quite identify. 1 2 3 4 5
10. Being in touch with emotions is essential. 1 2 3 4 5
11. I find it hard to describe how I feel about people. 1 2 3 4 5
12. People tell me to describe my feelings more. 1 2 3 4 5
13. I don’t know what’s going on inside me. 1 2 3 4 5
14. I often don’t know why I am angry. 1 2 3 4 5
15. I prefer talking to people about their everyday activities rather than their feelings. 1 2 3 4 5
16. I prefer to watch “light” entertainment shows rather than psychological dramas. 1 2 3 4 5
17. It is difficult for me to reveal my innermost feelings, even to close friends. 1 2 3 4 5
18. I can feel close to someone, even in moments of silence. 1 2 3 4 5
19. I find examination of my feelings useful in solving personal problems. 1 2 3 4 5
20. Looking for hidden meanings in movies or plays distracts from their enjoyment. 1 2 3 4 5

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Kentucky Inventory of Mindfulness Skills  
R.A. Baer, Ph.D. - University of Kentucky

Please rate each of the following statements using the scale provided. Write the number in the blank that best describes your own opinion of what is generally true for you.

<table>
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<tr>
<th></th>
<th>1</th>
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<th>4</th>
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<tbody>
<tr>
<td></td>
<td>Never or very rarely true</td>
<td>Rarely true</td>
<td>Sometimes true</td>
<td>Often true</td>
<td>Very often or always true</td>
</tr>
<tr>
<td>1</td>
<td>I notice changes in my body, such as whether my breathing slows down or speeds up.</td>
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<tr>
<td>2</td>
<td>I'm good at finding the words to describe my feelings.</td>
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<td>3</td>
<td>When I do things, my mind wanders off and I'm easily distracted.</td>
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<tr>
<td>4</td>
<td>I criticize myself for having irrational or inappropriate emotions.</td>
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<td>5</td>
<td>I pay attention to whether my muscles are tense or relaxed.</td>
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<tr>
<td>6</td>
<td>I can easily put my beliefs, opinions, and expectations into words.</td>
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<td>7</td>
<td>When I'm doing something, I'm only focused on what I'm doing, nothing else.</td>
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<tr>
<td>8</td>
<td>I tend to evaluate whether my perceptions are right or wrong.</td>
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<tr>
<td>9</td>
<td>When I'm walking, I deliberately notice the sensations of my body moving.</td>
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<tr>
<td>10</td>
<td>I'm good at thinking of words to express my perceptions, such as how things taste, smell, or sound.</td>
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<tr>
<td>11</td>
<td>I drive on &quot;automatic pilot&quot; without paying attention to what I'm doing.</td>
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<tr>
<td>12</td>
<td>I tell myself that I shouldn't be feeling the way I'm feeling.</td>
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<tr>
<td>13</td>
<td>When I take a shower or bath, I stay alert to the sensations of water on my body.</td>
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<tr>
<td>14</td>
<td>It's hard for me to find the words to describe what I'm thinking.</td>
<td></td>
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<tr>
<td>15</td>
<td>When I'm reading, I focus all my attention on what I'm reading.</td>
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<tr>
<td>16</td>
<td>I believe some of my thoughts are abnormal or bad and I shouldn't think that way.</td>
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<tr>
<td>17</td>
<td>I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.</td>
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<tr>
<td>18</td>
<td>I have trouble thinking of the right words to express how I feel about things.</td>
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<tr>
<td>19</td>
<td>When I do things, I get totally wrapped up in them and don't think about anything else.</td>
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</tbody>
</table>

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
<table>
<thead>
<tr>
<th>Participant code #:</th>
<th>Date:</th>
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<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Never or very rarely true</td>
<td>Rarely true</td>
<td>Sometimes true</td>
<td>Often true</td>
<td>Very often or always true</td>
</tr>
<tr>
<td>20</td>
<td>I make judgments about whether my thoughts are good or bad.</td>
<td></td>
<td></td>
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<tr>
<td>21</td>
<td>I pay attention to sensations, such as the wind in my hair or sun on my face.</td>
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<tr>
<td>22</td>
<td>When I have a sensation in my body, it’s difficult for me to describe it because I can’t find the right words.</td>
<td></td>
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<tr>
<td>23</td>
<td>I don’t pay attention to what I’m doing because I’m daydreaming, worrying, or otherwise distracted.</td>
<td></td>
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<tr>
<td>24</td>
<td>I tend to make judgments about how worthwhile or worthless my experiences are.</td>
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<tr>
<td>25</td>
<td>I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.</td>
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<tr>
<td>26</td>
<td>Even when I’m feeling terribly upset, I can find a way to put it into words.</td>
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<tr>
<td>27</td>
<td>When I’m doing chores, such as cleaning or laundry, I tend to daydream or think of other things.</td>
<td></td>
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<tr>
<td>28</td>
<td>I tell myself that I shouldn’t be thinking the way I’m thinking.</td>
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<tr>
<td>29</td>
<td>I notice the smells and aromas of things.</td>
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<tr>
<td>30</td>
<td>I intentionally stay aware of my feelings.</td>
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<tr>
<td>31</td>
<td>I tend to do several things at once rather than focusing on one thing at a time.</td>
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<tr>
<td>32</td>
<td>I think some of my emotions are bad or inappropriate and I shouldn’t feel them.</td>
<td></td>
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<tr>
<td>33</td>
<td>I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.</td>
<td></td>
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<tr>
<td>34</td>
<td>My natural tendency is to put my experiences into words.</td>
<td></td>
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<tr>
<td>35</td>
<td>When I’m working on something, part of my mind is occupied with other topics, such as what I’ll be doing later, or things I’d rather be doing.</td>
<td></td>
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<tr>
<td>36</td>
<td>I disapprove of myself when I have irrational ideas.</td>
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<tr>
<td>37</td>
<td>I pay attention to how my emotions affect my thoughts and behavior.</td>
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<tr>
<td>38</td>
<td>I get completely absorbed in what I’m doing, so that all my attention is focused on it.</td>
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<tr>
<td>39</td>
<td>I notice when my moods begin to change.</td>
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</tbody>
</table>
The Acceptance and Action Questionnaire (AAQ)

Below you will find a list of statements. Please rate the truth of each statement as it applies to you. Use the following scale to make your choice.

<p>| | | | | | | |</p>
<table>
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<td>1</td>
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<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Never True</td>
<td>Very Rarely True</td>
<td>Seldom True</td>
<td>Sometimes True</td>
<td>Frequently True</td>
<td>Almost Always True</td>
<td>Always True</td>
</tr>
</tbody>
</table>

___  1. I am able to take action on a problem even if I am uncertain what is the right thing to do.

___  2. I often catch myself daydreaming about things I've done and what I would do differently next time.

___  3. When I feel depressed or anxious, I am unable to take care of my responsibilities

___  4. I rarely worry about getting my anxieties, worries, and feelings under control.

___  5. I'm not afraid of my feelings.

___  6. When I evaluate something negatively, I usually recognize that this is just a reaction, not an objective fact.

___  7. When I compare myself to other people, it seems that most of them are handling their lives better than I do.

___  8. Anxiety is bad.

___  9. If I could magically remove all the painful experiences I've had in my life, I would do so.
Appendix F
Diary Card
<table>
<thead>
<tr>
<th>Substances</th>
<th>Rating/Urges</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circle Start Day</td>
<td>Illicit Drugs</td>
<td>Alcohol</td>
</tr>
<tr>
<td></td>
<td># What</td>
<td># What</td>
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<tr>
<td></td>
<td>Prescription Meds</td>
<td>PRN/Over the Counter</td>
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<td></td>
<td></td>
<td>Suicidal Ideation</td>
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<td>MON</td>
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<td>TUES</td>
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<td>THUR</td>
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<td>SAT</td>
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<td>SUN</td>
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</tbody>
</table>

Hours of therapy? VBC | DBT | Other |

*USED SKILLS

0 = Not thought about or used
1 = Thought about, not used, didn't want to
2 = Thought about, not used, wanted to
3 = Tried, but couldn't use them
4 = Tried, could do them, didn't help
5 = Tried, could use them, helped

Chain Analysis Notes or Other Comments
**SKILLS DIARY CARD**

**INSTRUCTIONS:** Circle the days you worked on each skill.

<table>
<thead>
<tr>
<th></th>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
<th>Thurs</th>
<th>Fri</th>
<th>Sat</th>
<th>Sun</th>
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</thead>
<tbody>
<tr>
<td>1. Wise Mind</td>
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<td>2. Observe: just notice</td>
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<td>3. Describe: put words on</td>
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<td>4. Nonjudgmental stance</td>
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<td>5. One-mindfully: in-the-moment</td>
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<td>6. Effectiveness: focus on what works</td>
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<td>7. Mindfulness of emotion</td>
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<td>8. Build MASTERY</td>
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<td>9. Build positive experiences</td>
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<td>10. Opposite (to-emotion) action</td>
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<td>11. Problem solving / Chain analysis</td>
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<td>12. Distract</td>
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<tr>
<td>13. Self-soothe</td>
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<td>14. Improve the moment</td>
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<td>15. Pros &amp; cons</td>
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<td>16. Radical acceptance</td>
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Appendix G
Therapist Adherence Form
**Therapist Adherence Form**

For each item, assess the therapist or client behavior on a scale of 0-6. The some of the following questions are global and applicable to most sessions, and others are specific to an individual session of the protocol. Therefore, each item may or may not have been present during each session.

**Part I: Therapist**

Descriptions are provided for even-number scale points. If you believe the therapist falls between two of the descriptions, select the intervening odd number.

0 Poor | 1 Barely Adequate | 2 Mediocre | 3 Satisfactory | 4 Good | 5 Very Good | 6 Excellent

1. **Setting and following an agenda.**
   - 0 Therapist did not send an agenda
   - 2 Therapist worked with the client to set a mutually satisfactory agenda that included specific target problems
   - 4 Therapist worked with the client to set an appropriate agenda with target problems, suitable for the available time. Established priorities and then followed the agenda.

2. **Skill Modules**
   - 0 Therapist did not present or review skill-based materials.
   - 2 Therapist had significant difficulties presenting or reviewing skill-based material (e.g., information was confusing, did not explain skill in sufficient detail)
   - 4 Therapist presented or reviewed skill-based material fairly clear. Therapist included some generic examples of the skills to illustrate a useful teaching point.
   - 6 Therapist presented or reviewed skill-material clearly and concisely. Presentation of material was custom tailored with examples or client experiences to help client incorporate / fully understand the information.

3. **Building a Life Worth Living / Values-Component**
   - 0 Therapist did not attempt to incorporate building a life worth living component into session.
   - 2 Therapist had significant difficulties incorporating the building a life worth living component of treatment, even though there were opportunities to do so. Therapist made mention of client’s values, but was unclear in how they related to current topics.
   - 4 Therapist referred to the life worth living component of treatment as it was applicable to session topics. The therapist made relevant statements referring to client’s stated values, but did not utilize to help with guidance or motivation for client future behaviors.
   - 6 The therapist skillfully explained, reiterated or referred to the life worth living component of treatment as it was applicable to session topics. Therapist utilized the client’s specific values and relevant goals as they applied to in-session / out of session actions as a source of motivation and guidance for continued change.
4. Homework

0 Therapist did not attempt to incorporate homework relevant to DBT

2 Therapist had significant difficulties incorporating homework (e.g., did not revisit previous homework, did not explain homework in sufficient detail)

4 Therapist reviewed previous homework and assigned DBT homework generally relevant to issues dealt with in session. Homework was explained in sufficient detail

6 Therapist reviewed previous homework and carefully assigned homework drawn from DBT for the coming week. Assignment seemed custom tailored to help client incorporate or experiment with new behaviors discussed during session

5. Understanding

0 Therapist repeatedly failed to understand what the client explicitly said.

2 Therapist was usually able to reflect or rephrase what the client explicitly said but repeatedly failed to respond to subtle communication. Limited ability to listen and empathize

4 Therapist generally seemed to grasp the client’s experience as reflected by both what the client explicitly said and what the client communicated in subtle ways. Good ability to listen and empathize.

6 Therapist seemed to understand the client’s experience thoroughly and was adept at communicating this understanding through appropriate verbal and non-verbal respond to the client. Excellent listening and empathic skills.

6. Use of Dialectics

0 Therapist failed to incorporate dialects in the therapy session and did not foster dialectical understanding for the client (behaviors, perspectives or emotions).

2 Therapist may have incorporated some use of dialectics during session, but was not consistent across the interaction; therapist also did not work to foster dialectic understanding for the client.

4 Therapist generally seemed to implement use of dialectics during session, and made some attempts to incorporate dialectical understanding for the client (in her behaviors, perspectives or emotions).

6 Therapist skillfully balanced dialectics in the therapy session and fostered dialectical understanding for the client (in her behaviors, perspective or emotions). Therapist also used validation of client’s current status, and a need/desire for additional changes to be implemented.

7. Feedback

0 Therapist did not ask for feedback to determine client’s understanding of, or response to the session.

2 Therapist elicited some feedback from the client, but did not ask enough questions to be sure the client understood the therapist’s reasoning during the session or whether the client was satisfied with the session.

4 Therapist asked enough questions to be sure that the client understood the therapist’s reasoning throughout the session and to determine the client’s reactions to the session. The therapist adjusted his/her behavior in response to the feedback, when appropriate.
Therapist was especially adept at eliciting and responding to verbal and non-verbal feedback throughout the session (e.g., elicited reactions to session, regularly checked for understanding, and summarize commitments to homework and skills at end of session).

8. Functional Analysis of Activity

Therapist did not explore consequences of client's behaviors and the context in which behavior occurred. Therapist did not encourage client to change activity patterns.

Therapist relied heavily on prescribing generic behaviors rather than doing a functional analysis to specify new client-specific behaviors or determine the consequences maintaining current behaviors.

Therapist helped client to understand mood-behavior relationships within the context of the client's experiences. The therapist collaborated with the client in examining these relationships to determine the consequences maintaining behavior and collaboratively developed client-specific alternatives.

Therapist was especially adept at guiding the client through a detailed analysis of the function of specific behaviors within the context of the client's experiences to determine the consequences maintaining behavior and collaboratively developed client-specific alternatives. Therapist skillfully used questioning and instruction to teach client to conduct a functional analysis independently.

9. Outcomes of Alternative Behaviors

Therapist did not discuss potential outcomes of alternative behaviors.

Therapist discussed some potential outcomes of alternative behaviors, with some difficulty. Offered vague suggestions for alternative behaviors.

Therapist discussed potential outcomes of alternative behaviors with client, and identified either specific choice points or specific, skillful alternative behaviors that could be used (both were not discussed). Therapist skillfully worked with client to examine potential outcomes of alternative client behaviors. Discussed specific choice points at which alternative behaviors could be applied and identified particular behaviors (from skill-based training) that could have been utilized.

10. Target Behaviors

Therapist did not discuss with client additional targets for behavior change.

Therapist discussed with client additional targets for behavior change using vague language and suggestions without asking for the clients input.

Therapist discussed behaviors with the client that she would like to change. A few ideas were identified (either by the client or therapist) and general skills were suggested to target those changes. Therapist collaborated with the client to explore behaviors that the client would like to change in relation to a specific area. Therapist helped plan how the client could use more skillful behaviors outside of therapy, and practice with the client (in her imagination or in session) how to use those behaviors.

Part II: Client

1. How much homework did the client complete for this session?

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<tr>
<th>0</th>
<th>1</th>
<th>2</th>
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<th>4</th>
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</thead>
<tbody>
<tr>
<td>None</td>
<td>A little</td>
<td>Some</td>
<td>Most</td>
<td>All</td>
</tr>
<tr>
<td>Participant code #:</td>
<td>Session:</td>
<td>Date:</td>
<td>Coder:</td>
<td></td>
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<td>---------------------</td>
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</table>

2. How thoroughly was the homework completed for this session?

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<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<tbody>
<tr>
<td>Not at all</td>
<td>A little</td>
<td>Some</td>
<td>Mostly</td>
<td>Completely</td>
</tr>
</tbody>
</table>

3. Based on the client's verbal reports in session, how active in pursuing treatment goals was she since the last session?

<table>
<thead>
<tr>
<th>0</th>
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<th>3</th>
<th>4</th>
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</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>A little</td>
<td>Some</td>
<td>Mostly</td>
<td>Completely</td>
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4. To what extent did the client demonstrate an understanding of the assigned homework?

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<th>4</th>
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<tbody>
<tr>
<td>Not at all</td>
<td>A little</td>
<td>Some</td>
<td>Mostly</td>
<td>Completely</td>
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</table>

5. To what extent was the client engaged in the session?

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<tr>
<th>0</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>A little</td>
<td>Some</td>
<td>Mostly</td>
<td>Completely</td>
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</tbody>
</table>

6. How difficult did you believe this client was to work with?

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<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>A little</td>
<td>Somewhat</td>
<td>Very</td>
<td>Extremely difficult</td>
</tr>
</tbody>
</table>

**Part III: Additional Considerations**

1. Did any special problems arise during the session (e.g., non-adherence to homework, interpersonal issues between therapist and client, hopelessness about therapy, relapse)?

   **YES**

2. If yes,

   - 0 Therapist could not deal adequately with special problems that arose.
   - 2 Therapist dealt with special problems adequately, but used strategies or conceptualizations inconsistent with DBT, or values-based concepts.
   - 4 Therapist attempted to deal with special problems using a DBT or values-based framework and was moderately skillful in applying techniques.
   - 6 Therapist was very skillful at handling special problems using DBT or values-based framework.

3. Were there any significant unusual factors in this session that you feel justified the therapist's departure from the standard approach measured by this scale?

   **YES (please explain below)**

   **NO**

4. How would you rate the clinician overall in this session?

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>Barely Adequate</td>
<td>Mediocre</td>
<td>Satisfactory</td>
<td>Good</td>
<td>Very Good</td>
<td>Excellent</td>
</tr>
</tbody>
</table>
Appendix H
Client Satisfaction Questionnaire
CSQ

Please help us evaluate our program by answering some questions about the services you have received. We are interested in your honest opinions, whether they are positive or negative. Please answer all of the questions. We also welcome your comments and suggestions. Thank you very much; we really appreciate your help.

1. How would you rate the quality of the service you have received.

2. Did you get the kind of service you wanted?
   1. No, not really  2. No, generally  3. Yes, definitely  4. Yes, definitely

3. To what extent has our program met your needs?
   1. None of my needs have been met  2. Only a few of my needs have been met  3. Most of my needs have been met  4. Almost all of my needs have been met

4. If a friend were in need of similar help, would you recommend our program to him or her?
   1. No, definitely not  2. No, I don’t think so  3. Yes, I think so  4. Yes, definitely

5. How satisfied are you with the amount of help you have received?

6. Have the services you received helped you to deal more effectively with problems/difficulties?
   1. No, they seemed to make things worse  2. No, they really didn’t help  3. Yes, they helped  4. Yes, they helped a great deal

7. In an overall general sense, how satisfied are you with the services you have received?

8. If you were to seek help again, would you come back to our program?
   1. No, definitely not  2. No, I don’t think so  3. Yes, I think so  4. Yes, definitely
Appendix I
Treatment Manual
Manual: 12 Session - Modified Dialectical Behavior Therapy
Treating Co-morbid Methamphetamine Substance Abuse / Dependence and Borderline Personality Disorder

Jessica R. Schultz, M.A. & Amy E. Naugle, Ph.D.
Western Michigan University 2005

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Session 1:

- **Orientation and commitment to treatment**
  This will be a discussion to review and introduce treatment information.
  1. Ask if they've had any questions RE: the informed consent document.
    a. If so review, explain and clarify any points
  2. Review course of treatment and commitment to treatment: timeline of therapy, number of sessions, expectations of participation and homework, & scheduling / missed appointments.
  3. Review purpose of treatment – specific goals *(Orientation & Guidelines - handout)*
    a. Give an idea of each major area, and discuss (based on assessment and client report) which areas may be the beginning of treatment focus

- **Discussion of building a life-worth living**
  This discussion will focus on what things in a participant's life are important to her (a meaningful relationship, her job/career, her beliefs about spirituality, ect.) and are ultimately worth her going through difficult things to build a life worth living. Also identify specific goals the participant wishes to work on during therapy. This informal assessment piece will be introduced as a way to get to know the participant better and understand important aspects of her life or any related personal goals that she may have. This information will be helpful for the participant to consider meaningful aspects of her life & motivations for treatment.
  1. Write down her list of motivations / values – things that are going to keep her invested, then have her discuss a few specific goals that she also wants to target (these may be anything that she can directly work on and that we can discuss progress every few sessions / incorporate into skill usage).
  2. Read back lists to clarify your discussion, then have her write down the same lists.

- **Acknowledge difficult aspects of treatment**
  *Needing to go through hell to build a life worth living...*  Note the length of time to establish unhealthy behavior patterns vs. time to change ways of thinking and behaving. Participant will be asked about fears, hesitancies, hopes, and goals to facilitate a discussion about treatment relevant obstacles and motivators that may occur in therapy. *(use ladder metaphor)*

- **Introduction of core mindfulness skills**
  This will be a psycho educational piece to introduce the concept of mindfulness, how it can be useful and how it can be applicable in times of distress or when experiencing intense cravings to use substances. The concepts will be reviewed, the skills practiced (observe breathing), and the participant will be assigned homework to facilitate development of this skill – wise mind and "what skills". *(Mindfulness 1 Diagram - handout, & Mindfulness 2 What and How - handout)*

- **Review of pretreatment & treatment diary cards**
  This section of the session will further review the purpose and use of the diary cards, including how to complete them accurately, and that they will be used and reviewed during every session. *(Diary card - handout)*

**Homework:** review mindfulness handouts, practice new skills, complete diary card

- **Completion of assessment measures**
  The following assessment measures will be administered after the session:
  1. Cope & BSI

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**Session 2:**

*Check homework and diary cards for completion.*

- **Review treatment commitment**
  This will be an open-ended discussion focused on the participant’s reflection about beginning treatment. Participant will be asked again about fears, hesitancies, hopes, and goals to facilitate a discussion about treatment relevant obstacles and motivators that may occur during therapy – if she has thought of any additional thoughts or concerns.

- **Review of diary cards**
  Review the diary card, note any relevant or target behavior that occurred. Emphasize the importance of filling out the diary card honestly, and on a daily basis for accuracy. Trouble-shoot ways to ensure daily & accurate completion.

- **Review – revisit discussion of building a life-worth living**
  Participant will be asked to reflect on the previous discussion about meaningful or worthwhile aspects in her life, or areas she wishes to make more meaningful. Specifically, she will be asked if she has thought of additional things that she would like to discuss or times that these things have motivated her in the past to do difficult things in her life.

- **Review core mindfulness skills**
  Participant will be asked to discuss her experience of practicing core mindfulness, including any difficulties or benefits she may have found. Via discussion it will be reviewed how it can be applicable in times of distressing emotions or when experiencing intense cravings to use substances (*crave surfing*). This skill will be also practiced in session. Finish introducing and practicing “how” skills and how the participant can use them until next session.

**Homework:** review mindfulness handouts, practice mindfulness skills, complete diary card

- **Completion of assessment measures**
  The following assessment measures will be administered after the session:
  1. Coping scales
  2. BSI

**Key Aspects Adapted From:**

Session 3:
Check homework and diary cards for completion.

- **Review of diary cards**
  Review the diary card, note any relevant or target behavior that occurred. Review the skill practiced for the previous time period (focus on core mindfulness).

- **Address building a life-worth living / goal-related topics discussed in session**
  Participant will be asked to evaluate her current behaviors for consistencies and inconsistencies with her stated meaningful aspects in her life, or areas she wishes to make more meaningful (personal goals). Further discussion will address working to maintain or initiate change, based on stated goals, via DBT skills utilization.

- **Review core mindfulness skills**
  Participant will be asked to discuss her experience of practicing core mindfulness, including any difficulties or benefits she may have found. Via discussion it will be reviewed how it can be applicable in times of distressing emotions or when experiencing intense cravings to use substances (crave surfing). This skill will be also practiced in session. Create a plan of how the participant can continue to practice key skills until next session (especially those that are difficult for her to apply).

**Homework:** review mindfulness handouts, practice mindfulness skills, complete diary card; if appropriate, offer client materials that will be introduced in the next session for her to read if she desires...

- **Completion of assessment measures**
  The following assessment measures will be administered after the session:
  1. Coping scales
  2. BSI

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Session 4:
Check homework and diary cards for completion.

- Review of diary cards
  Review the diary card, note any relevant or target behavior that occurred. Review the skill practiced for the previous time period (focus on mindfulness).

- Address building a life-worth living / goal-related topics discussed in session
  Participant will be asked to evaluate her current behaviors for consistencies and inconsistencies with her stated meaningful aspects in her life, or areas she wishes to make more meaningful (personal goals). Further discussion will address working to maintain or initiate change, based on stated goals, via DBT skills utilization.

- Introduction of emotion regulation skills
  This will be a psycho educational piece to introduce the concept of emotion regulation skills. This section will review goals of ER, how the skills can be useful and how they can be applicable when replacing negative coping skills, with healthier ER strategies. Complete the introduction handout with the participant in session to identify vulnerabilities that can be directly targeted with ER skills. The concepts will be reviewed (mindfulness of emotion, building positive experiences - short and long term - mastery, & possibly opposite action, based on time and other issues the client is bringing in to session) role-play of skills will be practiced, and the participant will be assigned homework to facilitate development of this skill. (Emotion Regulation 1 goals – handout, Emotion Regulation 2 positive emotions - handout & Emotion Regulation 3 opposite action - handout)

Homework: review emotion regulation handouts – including the chain analysis “how to”, practice emotion regulation and mindfulness skills, complete diary card

- Completion of assessment measures
  The following assessment measures will be administered after the session:
  1. Coping scales
  2. BSI

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Session 5:
Check homework and diary cards for completion.

- Review of diary cards
  Review the diary card, note any relevant or target behavior that occurred. Review the skill practiced for the previous time period (focus on emotion regulation).

- Address building a life-worth living / goal-related topics discussed in session
  Participant will be asked to evaluate her current behaviors for consistencies and inconsistencies with her stated meaningful aspects in her life, or areas she wishes to make more meaningful (personal goals). Further discussion will address working to maintain or initiate change, based on stated goals, via DBT skills utilization.

- Continuation of emotion regulation skills
  This section will review the goals and usefulness of ER, noting how they can be applicable when replacing negative coping skills with healthier emotion regulation strategies. The participant will share their homework experiences, including successful skills utilization and difficulties with implementation, and any other related concerns or experiences. Review an example or two of how the participant had used each skill to check for understanding. Finish any ER skill that was not finished the previous session.

- Introduction of Chain Analysis / Problem Solving
  This portion of session will be dedicated to the introduction of understanding the usefulness of and creating chain analyses. This problem solving skill will be discussed in the framework of identifying alternative behaviors, thoughts and emotions to choose healthy and value-consistent options, rather than old patterns of behavior and coping. Participants will practice creating a chain analysis with the therapist in session. Try to identify an event (from diary card or P report) that would be appropriate to chain – if there isn’t one, use an event where the client used very skillful behaviors to model the skill (Chain Analysis 1 how-to - handout; Chain Analysis 2 practice – handout)

Homework: review emotion regulation handouts, review chain analysis handouts, practice emotion regulation and mindfulness skills, review chain analysis from session, complete (at least begin) a practice chain analysis and complete diary card

- Completion of assessment measures
  The following assessment measures will be administered after the session:
  1. Coping scales
  2. BSI

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**Session 6:**
*Check homework and diary cards for completion.*

- **Review of diary cards**
  Review the diary card, note any relevant or target behavior that occurred. Review the skills practiced for the previous time period (focus on emotion regulation and chain analysis technique).

- **Address building a life-worth living / goal-related topics discussed in session**
  Participant will be asked to evaluate her current behaviors for consistencies and inconsistencies with her stated meaningful aspects in her life, or areas she wishes to make more meaningful (personal goals). Further discussion will address working to maintain or initiate change, based on stated goals, via DBT skills utilization.

- **Review of emotion regulation skills**
  This section will review the goals and usefulness of ER, noting how they can be applicable when replacing negative coping skills with healthier emotion regulation strategies. The participant will share their homework experiences, including successful skills utilization and difficulties with implementation.

- **Review of Chain Analysis**
  The key concepts of the chain analysis will be reviewed and the assigned homework for conducting a chain analysis will be discussed. Any participant questions or concerns will be addressed and discussed in session. Clarify times when the P needs to complete a chain analysis for the rest of treatment (using substances, acts of violence, intense anger displays...ect.). Give extra chain analysis forms to her.

*Homework:* review emotion regulation and chain analysis handouts, practice emotion regulation and mindfulness skills (focus on mastery of skills), complete diary card, utilize a chain analysis if applicable

- **Completion of assessment measures**
  The following assessment measures will be administered after the session:
  1. Coping scales
  2. BSI

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Session 7:
Check homework and diary cards for completion.

• Review of diary cards
  Review the diary card, note any relevant or target behavior that occurred. Review the skills practiced for the previous time period (emotion regulation, note mindfulness).

• Address building a life-worth living / goal-related topics discussed in session
  Participant will be asked to evaluate her current behaviors for consistencies and inconsistencies with her stated meaningful aspects in her life, or areas she wishes to make more meaningful (personal goals). Further discussion will address working to maintain or initiate change, based on stated goals, via DBT skills utilization.

• Introduction of distress tolerance skills
  This will be a psycho educational piece to introduce the concept of distress tolerance skills. This section will review goals of DT, how the skills can be useful and how they can be applicable when replacing negative coping skills with healthier distress tolerance strategies. The concepts of distract, self soothe and improve the moment will be reviewed, discussed and practiced in session. Also discuss if the participant has used these skills previously, and also have her commit to using skills that she has not tried in the past. The participant will be assigned homework to facilitate development of this skill, including specific skills that she will implement during the week. (Distress Tolerance 1 – handout and copies, Distress Tolerance 2 - handout)

Homework: review distress tolerance handouts, practice distress tolerance skills, emotion regulation and mindfulness skills, complete diary card

• Completion of assessment measures
  The following assessment measures will be administered after the session:
  1. Coping scales
  2. BSI
Session 8:
Check homework and diary cards for completion.

- **Review of diary cards/homework**
  Review the diary card, note any relevant or target behavior that occurred. Review the skills practiced for the previous time period (focus on interpersonal effectiveness, in addition to other skills).

- **Address building a life-worth living / goal-related topics discussed in session**
  Participant will be asked to evaluate her current behaviors for consistencies and inconsistencies with her stated meaningful aspects in her life, or areas she wishes to make more meaningful (personal goals). Further discussion will address working to maintain or initiate change, based on stated goals, via DBT skills utilization.
  1. *Discuss overall therapy progress, note the timeline of active treatment, and focus on the importance of skill utilization and mastery.*
  2. *If appropriate, assess for additional goals or areas that the participant wants to focus (if other goals have been successfully mastered).*

- **Continuation of distress tolerance skills**
  This section will review the goals and usefulness of DT skills, noting how they can be applicable when attempting to cope with a stressful situation, and specifically in circumstances where a participant would be likely to use illicit substances. The participant will share their homework experiences, including successful skill utilization and difficulties with implementation, the last 2 skills of pros and cons & radical acceptance will be discussed. An example of a pro/con will be conducted in session and the participant will have to complete another relevant one for homework.

**Homework:** review distress tolerance handouts, practice distress tolerance (including pro & con) and all other skills, complete diary card

- **Completion of assessment measures**
  The following assessment measures will be administered after the session:
  1. Coping scales
  2. BSI

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**Session 9:**
*Check homework and diary cards for completion.*

- **Review of diary cards/homework**
  Review the diary card, note any relevant or target behavior that occurred. Review the skills practiced for the previous time period (focus on distress tolerance, in addition to other skills).

- **Address building a life-worth living / goal-related topics discussed in session**
  Participant will be asked to evaluate her current behaviors for consistencies and inconsistencies with her stated meaningful aspects in her life, or areas she wishes to make more meaningful (personal goals). Further discussion will address working to maintain or initiate change, based on stated goals, via DBT skills utilization.

- **Review of distress tolerance skills**
  This section will review the goals and usefulness of DT skills, noting how they can be applicable when attempting to cope with a stressful situation, and specifically in circumstances where a participant would be likely to use illicit substances. The participant will share their homework experiences, including successful skill utilization and difficulties with implementation.

- **Review of core mindfulness skills**
  The key concepts of core mindfulness will be reviewed and practiced during session. Skill handout sheets will be briefly reviewed again for repetition. The skill will be reviewed and discussed in the context of what the participant recalls about the skill, and times skill implementation was useful for her, and how she will continue to use this skill area.

*Homework: review distress tolerance handouts, review mindfulness handouts, practice all skills, complete diary card*

- **Completion of assessment measures**
  The following assessment measures will be administered after the session:
  1. Coping scales
  2. BSI

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Session 10:
Check homework and diary cards for completion.

- **Review of diary cards/homework**
  Review the diary card, note any relevant or target behavior that occurred. Review the skills practiced for the previous time period (focus on mindfulness, in addition to other skills).

- **Address building a life-worth living / goal-related topics discussed in session**
  Participant will be asked to evaluate her current behaviors for consistencies and inconsistencies with her stated meaningful aspects in her life, or areas she wishes to make more meaningful (personal goals). Further discussion will address working to maintain or initiate change, based on stated goals, via DBT skills utilization.
  1. Discuss overall therapy progress, emphasize the timeline of active treatment, and focus on the importance of skill utilization and mastery

- **Review of emotion regulation skills**
  The key concepts of emotion regulation will be reviewed during session. Skill handout sheets will be used again for repetition. The skill will be reviewed and discussed in the context of what the participant recalls about the skill, and times skill implementation was, or will be useful for her.

- **Review of chain analysis**
  The key concepts of conducting a chain analysis will be reviewed and practiced during session. Skill handout sheets will be used again for repetition if necessary. The skill will be reviewed and discussed in the context of what the participant recalls about the skill, and times skill implementation was, or would be useful for her. Also note how this skill can be used without writing out the event, but simply thinking through each step of the event to trouble shoot a situation.

**Homework**: review emotion regulation handouts, review chain analysis handouts, practice all skills, complete chain analysis if relevant target behavior occurs, complete diary card

- **Completion of assessment measures**
  The following assessment measures will be administered after the session:
  1. Coping scales
  2. BSI

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**Session 11:**

*Check homework and diary cards for completion.*

- **Review of diary cards/homework**
  Review the diary card, note any relevant or target behavior that occurred. Review the skills practiced for the previous time period (focus on emotion regulation, in addition to other skills).

  1. Discuss the utilization of chain analysis, prompting the participant to discuss an example of a CA and how she was able to use the process to identify alternative behaviors to achieve a more values-consistent or desirable outcome (if applicable).

- **Address building a life-worth living / goal-related topics discussed in session**
  Participant will be asked to evaluate her current behaviors for consistencies and inconsistencies with her stated meaningful aspects in her life, or areas she wishes to make more meaningful (personal goals). Further discussion will address working to maintain or initiate change, based on stated goals, via DBT skills utilization.

- **Review of distress tolerance skills**
  The key concepts of distress tolerance will be reviewed during session. Skill handout sheets will be used again for repetition. The skill will be reviewed and discussed in the context of what the participant recalls about the skill, and times skill implementation was, or will be useful for her.

- **Discuss and process end of treatment phase**
  This section of the session will focus on the participant’s thoughts and feelings about termination of therapy, and ways to cope and facilitate a smooth transition. Additional treatment options will also be made available for participants if she would want to pursue further treatment.

**Homework:** review distress tolerance handouts, practice all skills, complete diary card

- **Completion of assessment measures**
  The following assessment measures will be administered after the session:

  1. Coping scales
  2. BSI

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Session 12:
Check homework and diary cards for completion.

- Review of diary cards/homework
  Review the diary card, note any relevant or target behavior that occurred. Review the skills practiced for the previous time period (focus on distress tolerance, in addition to other skills).

- Address building a life-worth living / goal-related topics discussed in session
  Participant will be asked to evaluate her current behaviors for consistencies and inconsistencies with her stated meaningful aspects in her life, or areas she wishes to make more meaningful (personal goals). Further discussion will address working to maintain or initiate change, based on stated goals, via DBT skills utilization.

- Discuss maintenance of acquired skills
  This portion of the therapy session will ask participants what they have gained in therapy, how they are going to continue to maintain those gains from therapy, and what challenges they might face that would threaten their sobriety. Participants will be challenged to continue to think about relapse prevention strategies, and additional support persons that they can rely on for assistance.

- Discuss and process end of treatment phase
  This section of the session will focus on the participant’s thoughts and feelings about termination of therapy, and ways to cope and facilitate a smooth transition. Additional treatment options will also be made available for participants if she would want to pursue further treatment.
  2. Give completion certificate and letter of completion.

- Completion of assessment measures
  The following assessment measures will be administered after the session:
  1. Coping scales
  2. BSI

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Appendix J
Research Protocol Approval
Date: September 16, 2005

To: Amy Naugle, Principal Investigator
Jessica Schultz, Student Investigator for dissertation

From: Mary Lagerwey, Ph.D., Chair

Re: HSIRB Project Number: 05-08-09

This letter will serve as confirmation that your research project entitled “Treatment of Co-morbid Methamphetamine Substance Abuse and Borderline Personality Disorder Features Using Modified Dialectical Behavior Therapy” has been approved as amended in your memo dated September 13, 2005 under the full category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note that you may only conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: August 17, 2006