



Dialectical Behavior Therapy in a Forensic Inpatient Setting: Initial Program Evaluation

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Abstract

Background: There is a scarcity of research investigating the implementation and outcomes of Dialectical Behavior Therapy (DBT) in a forensic psychiatric inpatient setting serving adults. This study describes a DBT program for chronically mentally ill patients on an all-female residential treatment unit in the California Department of State Hospitals (DSH).

Methods: We describe program components, basic demographics of the DBT participants including their mental health diagnosis, frequency of aggressive incidents toward self and others, and response type following aggressive incidents. In addition, we examined number of classes of medications administered to DBT participants. Descriptive statistics were used to describe differences in outcome measures pre-DBT, during DBT, versus post-DBT treatment.

Results: We observed a decrease in self-injurious behaviors, aggressive incidents toward staff and other patients, as well as a reduction in the frequency and duration of response type incidents after participation in DBT. The number of classes of medications used stayed relatively consistent.

Discussion: These preliminary results suggest that DBT may be an effective treatment for female patients in a forensic psychiatric inpatient setting by reducing episodes of self-harm and aggression.

Keywords: Dialectical Behavior Therapy (DBT); Forensic Psychiatric; Aggression; Self-Injurious Behavior

Introduction

State hospitals are increasingly providing treatment to civilly and forensically committed patients who are dangerous to self/others/gravely disabled or with criminal justice involvement. As such, many exhibit high levels of self-injurious behavior [1]. These patients are often clinically complex, exhibiting characteristics of personality disorders (e.g., self-injury and violence towards others) as well as severe psychiatric symptomatology [2-4]. With such complexity, efforts to provide comprehensive treatment programs to address these problematic behaviors are becoming more

widespread in forensic settings [5]. Although initially implemented in inpatient and outpatient general psychiatric settings, forensic facilities are increasingly turning to Dialectical Behavior Therapy (DBT) programs to improve patient treatment and treatment outcomes [6-8]. Randomized control trials of DBT within forensic settings are limited [9]. Some studies have shown that forensic or correctionally modified DBT programs can reduce psychiatric symptoms, impulsivity, and aggression [10], reduce recidivism [11], and improve general mental health symptoms [12]. Unfortunately,

these studies are limited by small sample size and a lack of comparison groups. Several studies have demonstrated DBT's effectiveness in reducing anxiety, depression, and self-injurious and suicidal behaviors in non-forensic inpatient psychiatric settings [13,14]. Very few studies have examined the implementation and outcomes of DBT within a forensic psychiatric setting and although support for using DBT in this type of setting is increasing, there is limited information about its effectiveness in forensic settings with individuals with Schizophrenia and other related psychotic disorders [15].

DBT is the 'gold standard' approach when addressing symptoms associated with Borderline Personality Disorder (BPD) [16,17]. DBT also offers effective treatment for a variety of other diagnostic categories, including bipolar disorder, anxiety, depression, and other maladaptive behaviors such as substance abuse and interpersonal violence [18,13]. Given the prevalence of personality disorder diagnoses and maladaptive behaviors within forensic psychiatric settings, a closer examination of the effectiveness of this treatment in the Department of State Hospitals (DSH) is warranted. The purpose of the current study is to discuss the implementation of the DBT program within a forensic psychiatric state hospital setting and to describe outcomes before, during, and after participation in DBT.

Methods

Program Implementation and Overview. Department of State Hospitals-Metropolitan (DSH-M) offers 996 beds total, 20 of which are specific to the DBT program. Overall, the patient population at DSH-M consists of mostly male patients (75%), average age 46 years (range 18-90 years), and ethnicity comprised of 34% White, 32% Hispanic, 24% Black, 7% Asian, 2% other, and 1% unknown. DSH-M serves patients with the following legal class commitment categories: Lanterman-Petris-Short (LPS) Act, Incompetent to Stand Trial (IST/PC 1370), Offenders with Mental Health Disorders (MDO), and Not Guilty by Reason of Insanity (NGRI). DSH-M implemented the comprehensive DBT program beginning in June 2013, and initially, DBT beds were spread out over three co-ed civilly committed (e.g., LPS) patient units. In June of 2015, DBT services were streamlined onto one, 15-bed, all-female civil unit; this was then later expanded in 2017 to a 20-bed unit. Patients were identified for the comprehensive DBT unit through either transfer from another unit within the hospital, or through direct admission from an external agency. External referrals were accepted from agencies and hospitals throughout California and required the involvement and approval of the respective county.

DBT Staff. The DBT-specific unit at DSH-M maintains a comprehensive DBT treatment program, which includes formally trained DBT staff and utilization of core DBT treatment strategies, and predominately focuses on the initial two of the four stages of treatment in DBT. The clinical team is composed of a psychiatrist, psychologist, 2 social workers, and a rehabilitation therapist. All clinical staff are licensed therapists, have received extensive

training in DBT, attend weekly consultation team meetings, and have monthly consultation calls with a DBT consultant. Training and the monthly consultation call are provided from experts in DBT training and implementation at Treatment Implementation Collaborative, LLC. With the exception of the psychiatrist, all team members carry a caseload of up to five DBT individual therapy patients. Nursing staff are also offered formal training in DBT skills and in-house supplemental trainings.

DBT Treatment Overview. All patients on the DBT unit received comprehensive DBT, which consisted of individual therapy, weekly DBT skills groups, weekly DBT homework group, and 24-hour milieu coaching. The 24-hour availability of milieu coaching served as a replacement for phone coaching/consultation traditionally done in outpatient DBT. The DBT unit taught the four main skills modules: Mindfulness, Distress Tolerance, Emotion Regulation, and Interpersonal Effectiveness. The groups were taught in 11-week increments to maintain consistency with the hospital's in-house treatment schedule. The DBT unit began every 11-week module with 2 weeks of mindfulness, followed by 9 weeks of the skill topic for that module. Patients also participated in a twice-weekly DBT In Action group that was focused on the applied practice of the skill being taught that week. When the unit moved locations and the census increased to 20, the clinical team began facilitating 2 sections of the DBT skills and homework group to reduce the number of patients in attendance and to enhance learning opportunities. The patients were grouped according to their observed cognitive functioning, overall familiarity with the skills, and behavioral challenges. Patients were required to attend skills groups throughout all stages of treatment while on the DBT unit.

DBT Treatment Stages. According to Linehan's treatment model [17,19], DBT was divided into four stages of treatment. The DBT unit focused on the initial two stages of treatment and the duration of these stages was determined by the progress made towards the resolution of targeted behaviors. Stages 3 and 4 are rarely reached in inpatient treatment as these stages are intended for post hospitalization and focus on learning to live a normal life and gaining the capacity to experience joy.

Stage 1 of DBT concentrated on Attaining Basic Capacities. This stage consisted of targeting and reducing life-threatening behaviors, therapy interfering behaviors, and quality of life interfering behaviors. The main components of treatment in this stage were chain analyses to identify controlling variables, maintaining target behaviors and teaching DBT change strategies: skills, contingency management, cognitive modification, problem solving, and informal exposure.

Stage 2 was Reducing Posttraumatic Stress and emphasized trauma processing for patients who carried a Posttraumatic Stress Disorder (PTSD) diagnosis or had a history of trauma. Trauma processing utilized the foundation of skills that were developed in Stage 1 to delve deeper into the processing of intense emotional experiences and trauma. The in-depth and repetitious processing

of the trauma supported not only further resolution of target behaviors, but an overall reduction in emotional vulnerability. The goal of Stage 2 was to further reduce emotional vulnerability and to eliminate or reduce trauma-related symptoms and dysregulation (i.e., flashbacks, nightmares, intrusive thoughts, blackouts, disassociation, etc.). In order to move to this stage of treatment, a patient must have demonstrated integration and generalization of DBT skills, have been free of life-threatening behaviors for 8 weeks, and been able to regulate emotions independent of repeated and frequent use of unscheduled medication for agitation (PRN usage). Patients provided Stage 2 DBT were guided through Edna Foa's model of trauma processing known as Prolonged Exposure [20], which involved repeated retelling and re-examining of trauma details until the patient was no longer demonstrating significant distress when presented with trauma-related stimuli.

Stage 3 allowed for the introduction of other therapeutic treatments and theoretical approaches to support finding deeper meaning and understanding of one's own life and taking responsibility for one's own actions. This was also the stage where case management was more prevalent to support patients in laying out steps and identifying resources needed in order to accomplish their life goals. Little is written about the 4th and final stage of DBT; however, the focus was on patients completely reaching their goals, finding joy, and meeting their full potential as they were no longer hindered by unmanageable emotions. This final stage did not necessarily involve treatment.

Program Discharge or Termination Criteria. Patients were generally discharged from the DBT program to a lower level of care or transferred to the discharge readiness unit after having successfully completed DBT Stage 1 and/or having met their discharge criteria unless the patient had been identified as needing Stage 2 treatment. Stage 2 treatment was offered when trauma processing was clinically indicated. In most cases, successful completion of the program also involved abstaining from aggression towards self or others for a minimum of 90 days. Patients were transferred off the DBT unit if they missed 4 sequential sessions of either DBT individual therapy, skills group, or homework group. In addition, patients were transferred off the unit if they demonstrated a repeated and pervasive lack of engagement in treatment.

DBT Participants. All patients admitted to the DBT program were required to be on Lanterman- Petris-Short (LPS) Conservatorship. LPS patients were individuals who had been placed on conservatorship per WIC 5008 for being gravely disabled and had a court-appointed conservator for a maximum of one year, requiring annual renewal. When admitting patients to the DBT program, the focus was on presenting behavior as opposed to diagnosis. In order to be admitted to the unit, patients were required to meet one or more of the following behavioral impairment criteria: repeated and frequent PRN usage, chronic suicidal ideation, repeated engagement in self-injurious behaviors, inability to maintain stable interpersonal relationships, physical

aggression, and/or property destruction. Those with uncontrolled psychosis were ineligible for the program as active psychosis can preclude meaningful engagement in the treatment. Patients admitted to the DBT program carried a wide range of diagnoses including, but not limited to, Borderline Personality Disorder, Major Depressive Disorder, Bipolar Disorder, Schizoaffective Disorder, Schizophrenia, Generalized Anxiety Disorder, PTSD, and/or Substance Use Disorder.

The selected participants fell into two categories:

- a) patients who had plateaued or stabilized on their unit, and could benefit from developing skills to support success in stepping down to a less restrictive placement, and
- b) those who exhibited high risk behaviors (e.g., chronic suicidal ideation, swallowing foreign bodies, insertion of objects, cutting, asphyxiation) that had shown little to no progress or response to treatment on either their current unit or at their referring placement.

The patients that were directly admitted to the DBT unit from an outside placement were found to meet selection criteria upon review of their admission packets by the Admission Coordinator, DBT Coordinator, and DBT Clinical Lead. Patients falling into the high-risk behavior category often had a history of chronic use of restrictive measures (e.g., wrist-to-waist restraints, 5-point restraints, soft ties) and/or required prolonged and/or repeated placement on watch with one assigned staff constantly observing and monitoring (1:1 observational status) to maintain their safety.

Outcomes. Basic demographics (e.g., sex, age, race) are reported for DBT participants in addition to general information on mental health diagnoses, number of classes of medications used, previous number of state hospitalizations, and history of aggressive behaviors towards self and others as captured in Special Incident Reports (SIR's) maintained by the DSH Data Management Office. A SIR is defined as an occurrence that is potentially or actually physically and/or psychologically harmful to a patient who is served at the hospital and/or is inconsistent with his or her expected behavior, conditions, treatment, or plan of care. It can also include an occurrence or circumstance which adversely affects, or has the potential of adversely affecting, a patient's health, safety, and wellbeing, and/or the operation of the hospital. Data in the current study was collected from patients admitted to the DBT unit at DSH-M between July 1, 2016-June 31, 2019.

Outcome variables (see Appendix for definitions) were collected in three different time frames: pre-DBT, during DBT, and post-DBT (if available). During DBT timeframe included the duration of a patient's length of stay within the comprehensive DBT program (from DBT start date to DBT end date). Post-DBT timeframe included the duration of a patient's length of stay from DBT end date to DSH discharge date (or end date of data collection, 6/31/19). Post-DBT data was not available for patients who discharged from the hospital from the DBT unit.

Analysis. Rates of self-injurious behaviors, aggressive incidents towards other patients and staff, and response types (e.g., seclusion, restraints, or enhanced observation) were calculated based on frequency of incidents divided by length of stay (in days) before,

during, and after DBT treatment when available. We compared the mean number of classes of medication patients were on before, during, and after DBT treatment as well.

Results

Table 1: Patient Demographics of DBT participants at DSH-M.

Sex, n (%)	
Female	29 (100%)
Male	0 (0%)
Ethnicity, n (%)	
White	12 (41%)
Hispanic	9 (31%)
Black	5 (17%)
Asian	1 (3%)
Unknown	2 (7%)
Average Age, years [range]	28.5 ± 9.1 [19-51]
Average Length of Stay in DBT, days [range]	323 ± 232 [50-968]
Commitment Type/Penal Code, n (%)	
LPS	29 (100%)
Diagnosis*, n (%)	
Borderline Personality Disorder	9 (26.5%)
Schizoaffective Disorder, bipolar type	8 (23.5%)
Posttraumatic Stress Disorder	4 (11.8%)
Antisocial Personality Disorder	2 (5.9%)
Bipolar I Disorder, most recent episode depressed	2 (5.9%)
Major Depressive Disorder	2 (5.9%)
Schizophrenia	2 (5.9%)
Autism Spectrum Disorder	1 (2.9%)
Bipolar I Disorder, most recent episode manic	1 (2.9%)
Borderline Intellectual Functioning	1 (2.9%)
Mild Intellectual Disorder	1 (2.9%)
Schizoaffective Disorder, depressive type	1 (2.9%)

Note: Diagnosis list is not exclusive- some patients had more than one diagnosis therefore sum total>n=29.

Table 2: Outcomes measures compared rates pre-DBT, during DBT, and post-DBT.

	Pre-DBT	During DBT	Post-DBT
Self-injurious behaviors	0.062	0.024	0
Aggression towards peers/other patients	0.039	0.033	0.003
Aggression towards staff	0.043	0.029	0
Average number of seclusion incidents [range]	0.7 [0-1]	0.03 [0-1]	0
Average number of restraint incidents [range]	3.7 [0-29]	2.03 [0-14]	0.4 [0-6]
Average number of enhanced observation incidents [range]	0.7 [0-6]	0.9 [0-6]	0.2 [0-3]
Average hours spent in seclusion [range]	0.2 [0-3.5]	0.1 [0-3.3]	0
Average hours spent in restraints [range]	27 [0-523]	5.3 [0-42]	0.9 [0-16]
Average hours spent under enhanced observation [range]	100 [0-1336]	63.5 [0-605]	5.9 [0-108]
Mean number of classes of medication [range]	3.58 [2-6]	3.52 [2-5]	3.5 [2-5]

Patient Demographics. At DSH-M, 100% of the DBT patients were female and on LPS Conservatorship (n=29, see Table 1). Ethnicities represented included 41% White, 31% Hispanic, 17% Black, 3% Asian, and 7% unknown. Average age was 28.5±9.1 years (range 19-51). Patients participated in the DBT program on average of 233±166 days (range 50-602 days). The more common diagnoses among DBT participants were Borderline Personality Disorder and Schizoaffective Disorder, bipolar type.

Outcome Variables. Comparisons of outcome measures pre-DBT, during DBT, and post-DBT are presented (see Table 2). Rates of self-injurious behaviors, aggression towards other patients, and aggression towards staff decreased post-DBT. The frequency and duration of response types (seclusion, restraint, and enhanced observation) mostly decreased. The number of classes of medications stayed relatively consistent pre-DBT, during DBT, and post-DBT. Only routinely administered medications were evaluated. PRN medication, or medications used to treat side-effects (e.g., benztropine myselate, diphenhydramine), were not included in the data. For example, if a patient was prescribed haloperidol routinely and also had a standing haloperidol PRN, the haloperidol would only be counted. If it were only prescribed as a PRN, then it would not be counted. Similarly, if a patient had a standing order for routine diphenhydramine, then it would be counted, but not if it was only prescribed as a PRN.

Discussion

The results of this descriptive study demonstrate the feasibility of implementing a DBT program within a state forensic hospital setting serving chronically mentally ill adults. DBT may be particularly effective in patients with a history of repeated and frequent use of medication for agitation, chronic suicidal ideation, repeated engagement in self-injurious behaviors, inability to maintain healthy relationships, physical aggression, and/or property destruction. This study is one of the few studies that has looked at DBT in an adult, inpatient setting in a forensic hospital. The study also shows that it is possible to track some outcomes of interest including rates of self-injurious behavior, aggression towards peers and staff, response type, and classes of medications. Our findings are in line with another study looking at adolescents in an inpatient setting who experienced decreases in suicide attempts, self-injury, use of restraints and enhanced observation, and outside hospitalizations after receiving DBT treatment [14]. Other studies, as reviewed by Frazier and Vela [21], suggest that DBT is effective in reducing anger and aggression amongst recipients, even when DBT was modified for the targeted population.

There is some evidence that the use of psychotropic medication use with patients may decrease in DBT treatment [22]. In the current study, the number of classes of medications used stayed relatively consistent pre-DBT, during DBT, and post-DBT. This finding may have been impacted by incomplete pre and post DBT data. This is an area that needs to be looked at in further detail.

DBT is a novel mode of therapy and is fundamentally different from the traditional treatment methodologies used in this type of setting. As such, there were multiple challenges to overcome for the program to be successfully implemented. Initially, the DBT units at DSH-M housed a cadre of DBT patients co-mingled with traditional LPS patients on a full-size unit. After program initiation, it became apparent that this was ineffective as a two-tiered system of protocols, privileges, and prohibitions was difficult to execute. DBT patients housed alongside other patients with severe psychotic disorders, who also demonstrated variable but often low commitment to treatment, created significant distraction for the DBT patients. The intensity of effort needed to treat DBT patients made it clear that the optimal milieu would be one dedicated solely to DBT and limited in size. Having an all-female population was the ideal; the inevitable sexual relationships that develop in co-ed units, in addition to the fact that many females with BPD also suffer from sexual trauma, led to the conclusion a female-only unit would allow for more focus on the goals of treatment.

Support and collaboration from Hospital Administration was and continues to be critical for the successful operation of the DBT program within a forensic psychiatric setting. Without their support, the DBT program would not have been successfully implemented and able to sustain itself overtime. One study, looking at administrative leadership perspectives on DBT implementation and sustainability in community behavioral health settings, recognized the importance of support by agency leadership due to the rigorous needs, resources, and costs associated with implementing and maintaining a DBT program [23]. A lack of administrative support has been found to be a consistent obstacle when starting a DBT program [24].

There were some challenges in implementing DBT in this setting. Initially, there were various levels of interest in trying a new treatment modality as most clinical and nursing staff had little to no exposure to DBT. Providing training and information on BPD and DBT helped staff that were hesitant to adopt a new treatment modality stemming from negative feelings about BPD and/or DBT [24]. Additionally, it was recognized that one training would not be sufficient. On-going hands on training for nursing staff would be necessary for long-term success. Significant effort went into organizing mini-seminars, attending 3-4 day trainings at DSH facilities, and using other formal and informal training modalities, such as online training and access to all training and DBT skills material. Due to the fluidity of staff assignments within the hospital, there was a constant flow of "new" staff onto the DBT unit requiring these training efforts to remain ongoing. DBT requires a great deal of training and staffing changes can impact the long-term endurance of the program [24]. Furthermore, some components of DBT did not align with several existing hospital policies and protocols such as the response to self-injurious behavior, a well-known symptom of BPD. This required creating a DBT-specific protocol to address self-injurious behavior in order to avoid inadvertently reinforcing maladaptive behaviors that occurred in efforts to obtain secondary

gains, such as medications or enhanced observation. Despite these challenges, DSH-M was able to successfully implement DBT and demonstrated that it is feasible to track outcome data.

Limitations. Other limitations of this study include the small sample size of only 29 participants and not having complete pre-DBT and post-DBT data on all participants due to some patients being directly admitted from an external agency and others directly discharged from the hospital from the DBT unit. Obtaining relevant records from an external agency was not always possible and it is often difficult to follow-up with patients once they are discharged from the hospital. Nonetheless, efforts to obtain pre- and post-DBT data can be improved in future studies. Furthermore, all patients in this sample were female and on LPS conservatorship. This prevents generalizing the results to other populations beyond the current setting. Also, patients with severe symptoms of active psychosis such as delusions, hallucinations, and/or disorganization were excluded from being admitted to the program. This is due to symptoms interfering with their ability to engage and participate in the treatment in a meaningful way and possibly creating disruption on the unit. Patients admitted to the unit were not required to be completely psychiatrically stable, but they did need to have some ability to be an active participant in the DBT program. Future studies will include additional outcome measures and attempt to replicate these findings at an additional DSH site to increase our sample size and heterogeneity of participants.

Conclusions

DBT has the potential to positively impact patient safety, staff safety, and effectiveness of patient care. These results demonstrate that it is feasible to implement DBT in a forensic psychiatric inpatient hospital setting and that it may be efficacious in reducing self-injurious behaviors and aggression towards others, as well as reducing the need for seclusion, restraints, and resource-intensive enhanced observation. The need for pre-implementation preparation and change management at the highest executive level was found to be paramount to the successful implementation of DBT. Sustainability of the DBT program required continuous support from executive leadership, financial resources, on-going training opportunities, and policy changes. The authors recommend exploring the use of DBT in other populations within this setting, adding additional outcome measures such as assessments to examine any changes in psychological functioning, and comparing different legal classifications. DSH has a comprehensive DBT program at a second site serving multiple legal classifications and consisting of both men and women and will be implementing a third program at an additional site. Psychological assessments looking at emotional regulation, borderline symptomology, and trauma have been recently added to our DBT data collection protocol. Overall, preliminary findings on the effectiveness of DBT in a forensic psychiatric inpatient setting looks promising and highlights the importance of evidenced-based treatment in reducing violence and self-injurious types of behaviors.

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Declaration of Competing Interest

There are no competing interests to declare.

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Appendix: Definitions of Outcome Variables.

Outcome Variable	Type of Measurement	SIR Code and Example
Self-Injurious Behaviors (SIB)	Rate	SIBs included the following:
		1) Suicide attempt (SA): Patient’s behavioral acts with suicidal intent such as cutting, attempted hanging, ingestion of foreign bodies, or potentially toxic substances.
		2) Self-harm ideation (SB): Patient reports or has recent history of thoughts of self-harm without suicide intent and enhanced observation is ordered.
		3) Suicide death (SD): A self-inflicted injury resulting in death.
		4) Self-harm threat (SH): Patient threatening self-harm.
		5) Suicide ideation (SI): Patient reports or has recent history of thoughts of suicide intent and enhanced observation is ordered.
		6) Aggressive act on self (SS): Self- inflicted injuries with intent to harm self and without suicide intent (e.g., cutting, head-banging, embedding, etc.).
7) Suicide threat (ST): Any verbal or physical indications that signal a patient at the hospital is going to make or may make a suicide attempt.		
Aggression towards other patients	Rate	(A2) Physical acts of aggression towards other patients. Includes kicking, biting, hitting, etc.
Aggression towards staff	Rate	(A4) Physical acts of aggression towards staff. Includes kicking, biting, hitting, etc.
Response Types	Frequency and Duration	Total number of incidents and time (in hours) patient spent in the following after an aggressive act or self-injurious behavior:
		1) seclusion (isolation from peers and staff)
		2) ambulatory restraint (e.g., walking restraints, spit hood, mittens, etc.) or non-ambulatory restraint (e.g., 5-point restraints)
		3) enhanced observation (e.g., 1:1, 2:1)



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