Dialectical Behavior Therapy: Application of DBT Principles in Rehabilitation and Treatment Processes for Individuals with Spinal Cord Injuries or Diseases

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ABSTRACT

This paper describes the application of dialectical behavior therapy (DBT), an empirically tested approach to therapy for individuals with spinal cord injuries or diseases (SCI/Ds). DBT has been successfully used to treat a variety of conditions, including borderline personality disorders, substance abuse, eating disorders, and the intense emotional dysregulation that often accompanies these diagnoses. The authors discuss how DBT principles and techniques can enhance treatment of persons with SCI/D. The dialectical conflict that occurs within the injury-disease-adaptation-rehabilitation process is also discussed. Selected psychotherapeutic interventions, including cognitive behavioral strategies, mindfulness techniques, and radical acceptance are presented and applied to the treatment process for individuals with SCI/D.

INTRODUCTION

Spinal cord injuries and diseases (SCI/Ds) are often accompanied by emotional disturbances that can have devastating effects on an individual with SCI/D. The emotional disturbances among individuals with SCI/D are often referred to as “depression” but are usually far more complex than a mood disorder. SCI/D is accompanied by demands to adjust to a variety of new roles, expectations, and...
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Life choices. The loss of mobility, sensation, energy, cognitive effectiveness, and role-specific behaviors often provoke emotional dysregulation, resulting in a sense of loss of control and futility regarding the future. Some people with SCI/D develop issues with substance abuse and suicidal ideation. Mental health professionals working with individuals with SCI/D can apply knowledge of DBT principles and techniques in the rehabilitation and treatment process—in addition to using traditional interventions to support functional gains.

DIALECTICS, REHABILITATION, AND PSYCHOTHERAPY
Wells (1972, cited in Kegan, 1982) described a shift toward dialectical approaches in the social and natural sciences over the last century and a half. Dialectical approaches to human behavior have three primary characteristics: (1) interrelatedness and a systems perspective is emphasized; (2) within-systems dialectic conflicts are forever at work as thesis, antithesis and synthesis; and (3) in the dialectical framework the complexity of the whole is emphasized.

Persons who have sustained SCI, or have been diagnosed with a spinal cord disease receive treatment for acute, post-acute, and chronic conditions. At each phase of treatment, psychosocial issues may arise that can be effectively managed through psychotherapy. During the rehabilitation phases of treatment and often afterward as well, clinicians commit to goals and activities intended to maximize capacity; they endorse the "thesis" that rehabilitation will result in something positive. The "antithesis" or opposing reality that may be more frequently endorsed by patients is the fact that the outcome of rehabilitation, regardless of benefit, will not restore pre-morbid capacities and functionality. Thus, a conflict is inherent in all treatment processes, though it may seldom be acknowledged.

The conflict between the professional’s thesis that rehabilitation will be helpful and the patient’s antithesis that therapeutic gains will only approximate pre-morbid functioning creates a dynamic tension that can be managed through the co-creation of a new wholeness or “synthesis.” The synthesis, or new wholeness, includes and acknowledges the inherent conflict between the clinician’s and client’s schemas. These may include the conflict associated with participation in rehabilitation versus not participating, capacity versus incapacity, pain versus pleasure, energy versus fatigue, and hope versus futility. Moreover, the synthesis that can emerge through the application of DBT to the treatment process provides a mechanism for clinicians and patients to manage self-preservation and self-transformation by enhancing self-control and self-direction. Thus, within the dialectical framework, potentials for change amid acknowledged limitations are recognized as the fundamental reality that must be radically accepted.

Since rehabilitation processes confront deficits and attempt to maximize strengths, the dialectical conflict between capacity and limitation is an issue that is inherent from the moment the diagnosis of SCI/D is made. Stability, hope, and therapeutic gains emerge from the synthesis of acceptance and adaptation and offer an opportunity for functional and emotional gains.

LITERATURE REVIEW
DBT was initially developed for treating individuals with borderline personality disorder (BPD) and suicidal behaviors in the outpatient setting (Linehan, 1993; Hopko, Sanchez, Hopko, Dvir, & Lejuez, 2003; Verheul et al., 2003). Since then DBT has been applied and studied in the inpatient setting (Alper & Peterson, 2001; Bohus et al., 2000; Swenson, Sanderson, Dulit, & Linehan, 2001), in a VA Medical Center (Spoont, Sayers, Thuras, Erbes, & Winston, 2003), with suicidal adolescents (e.g. Miller & Glinski, 2000; Rathus & Miller, 2002), with depressed older adults (Lynch, Morse, Mendelson, & Robbins, 2003), with binge eating disorder (Telch, Agras, & Linehan, 2001; Safer, Lively, Telch, & Agras, 2002), and bulimia (Safer, Telch, & Agras, 2001).

Dually diagnosed populations have also been treated using DBT. The literature regarding the use of DBT with dually diagnosed populations includes citations related to individuals with BPD and opioid use (Linehan et al., 2002), BPD and substance abuse (van den Bosch, Verheul, Schippers, & van den Brink, 2002), as well as BPD and eating disorder (Kotler, Boudreau, & Devlin, 2003; Palmer et al., 2003). In addition, DBT has been integrated into family therapies with adolescent members (Woodberry, Miller, Glinski, Indik, & Mitchell, 2002).

Individuals with borderline personality disorder often present with difficulties with disturbed interpersonal relations and emotional dysregulation.
Dialectical behavior therapy (Linehan, 1993; Rogers, 2003). Disturbed interpersonal relationships and emotional dysregulation affect an individual's ability to function in social situations.

**BPD, DBT, AND POST-TRAUMATIC STRESS DISORDER**

BPD has been linked and associated with post-traumatic stress disorder (PTSD) (Golier et al. 2003). Studies have demonstrated positive outcomes attributed to the use of DBT to decrease some PTSD-related symptomatology. These PTSD symptoms included reduced suicidal ideation (Linehan, 1993; Hopko et al., 2003; Verheul, et al., 2003), reduced crisis-based coping behaviors (Linehan.), reduced self-injurious behaviors (Bohus et al., 2004), lasting decreases in angry and violent behaviors (Evershed et al., 2003), reduced clinical psychopathology (Bohus et al.), as well as improvements in depression, dissociation, anxiety, and global stress (Bohus et al. 2000).

**EMOTIONAL AND PSYCHOSOCIAL ADJUSTMENT TO SCI**

A review of three decades of literature on emotional adjustment to spinal cord injury (SCI) demonstrated that positive psychological adjustment to SCI can be predicted based on coping skills, stress appraisal, and psychosocial resources (Galvin & Godfrey; 2001). Galvin and Godfrey also found evidence to support the need for psychological and psychosocial intervention to promote mental health and prevent depression among individuals with SCI/D who are at risk of developing clinical depression.

In a longitudinal analysis, Kennedy and Rogers (2000) found elevated levels of depression and anxiety among individuals with SCI/D. Their research supported the need for psychological care in SCI rehabilitation. More recently, Coping Effectiveness Training (CET) was correlated with improvement in psychological adjustment to SCI (Kennedy, Duff, Evans, & Beedie, 2003). Kennedy et al. found reduced levels of depression and anxiety for patients with SCI who participated in CET. Their CET intervention relied heavily on cognitive restructuring. DBT intervention methods also address cognitive structure. Research has demonstrated that higher rates of impaired psychosocial adjustment and adaptation are correlated with patients with SCI with cognitive deficits (Davidoff, Rothe, & Richards, 1992). Thus, individuals with SCI/D who have co-morbidities such as traumatic brain injury may be at higher risk.

**QUALITY OF LIFE**

The SCI-affected individual's perception of what constitutes a good quality of life was used to develop a brief quality of life questionnaire (Lundqvist et al., 1997). The key issues that defined a good quality of life according to SCI-affected individuals included a sense of well-being and mental health, the ability to function physically, and feelings of independence. Hammell (1994) studied men with SCI and found that low scores in social integration resulted in social isolation and low scores were correlated with higher levels of depression.

**RATIONALE FOR THE APPLICATION OF DBT IN THE TREATMENT OF INDIVIDUALS WITH SCI/D**

The authors' clinical experiences include the treatment of individuals with SCI/D, shortly after acute care hospitalization or after diagnosis, as well as in various stages of rehabilitation. These experiences have provided us with opportunities to observe that SCI/D-affected individuals often experience emotional dysregulation, expressions of profound grief, expressed suicidal ideation, rage directed at clinicians or family, difficulties with their sense of self and a pessimistic view of their future. These observed behaviors in SCI/D-affected individuals are similar in nature, intensity, and impact as many of the behaviors, affects and symptoms typically associated with BPD.

It is important to note that these behaviors were observed among individuals with severe injuries early in the acute treatment process at a regional Level I Trauma Center and in subsequent outpatient psychotherapy. Similar behaviors, affects, and cognitions have been observed during treatment in the office setting and outpatient medical clinic among a population of people with multiple sclerosis (MS). Given the intensity of the clinical presentation and the emotion regulation difficulties the individual clients with SCI/D were experiencing, we began an exploration of DBT and its potential application in rehabilitation processes with individuals who were coping with SCI/D. There is no published empirical or descriptive literature involving the application of DBT with individuals affected by SCI/D. In personal correspondence, Marsha Linehan stated she was not aware of DBT being applied with the SCI/D population or in a rehabilitation setting other than substance abuse (Linehan, 2003).
Table 1. Rationale for Applying DBT Principles in Treatment of Individuals With SCI/D

- Individuals coping with SCI/D may struggle with emotional lability, occupational challenges, economic changes, and socially destabilizing state regulation difficulties.
- Individuals with SCI/D tend to experience increased levels of dependency that compromise their sense of autonomy which can lead to an experience of living in an invalidating environment.
- The experience of coping with SCI/D may provoke fears of abandonment, hopelessness, chronic emptiness, and relational instability for the affected individual.
- Individuals with SCI/D can experience identity disturbances and problems with sense of self that can result in emotional dysregulation.
- Individuals with SCI/D can experience intense anger, suicidal/parasuicidal behavior, and impulsivity that is potentially self-damaging.
- Individuals coping with SCI/D may find themselves experiencing a sense of chronic invalidation due to post-injury/disease process and/or sequelae.

INVALIDATING ENVIRONMENTS

Linehan, (1993) postulated that people with BPD or who have traits closely associated with BPD are emotionally vulnerable. She theorized that “invalidating environments” was one of the key variables in the backgrounds of emotionally vulnerable people coping with BPD. According to Linehan, repeated exposure to stressors in the “invalidating environments” sensitized the autonomic nervous system to high levels of reactivity.

An individual diagnosed with SCI/D must navigate the same world they lived in prior to their SCI/D diagnosis, while learning to cope with new physical challenges, emotional challenges, and an evolving new view of one’s sense of self. The process of change and adaptation often results in the individual experiencing their external world as an invalidating environment. For the individual with SCI/D, their day-to-day experiences while living in an invalidating environment discounts their competencies; this, in turn, may result in self-doubt about one’s ability to cope and function. For example, individuals with SCI/D commonly experience and describe feelings of self-doubt when their significant other(s) respond to them with disqualifying and invalidating responses as attempts to effectively manage changes in their emotions and their interactions with their environment.

In the treatment process, interpersonal communications between therapists and individuals with SCI/D can be perceived, or misperceived, as not only invalidating of their feelings but also of the individual. Invalidating environments blame victims. Research by Swann, Stein-Seroussi, and Giesler (1992) revealed that when an individual’s self-constructs are not verified, arousal increases. Therefore, increased arousal then may lead to cognitive dysfunction, emotional dysregulation, and an inability to process new information accurately.

DBT AND EVOLVING THERAPEUTIC GAIN

DBT may be distinguished from traditional behavior therapies as it includes a dialectical philosophical conceptual framework, the integration of mindfulness meditation practices, and the application of therapeutic principles including validation, a reciprocal communication style, and environmental interventions. Clinical consultation is a fundamental tenet of DBT. A dialectical philosophical orientation to clinical processes includes the following principles:

- a whole is a relationship of heterogeneous parts
- no single part has significance when viewed independent of the whole
- the whole is more than the sum of its parts
- parts, wholes, and processes are interrelated
- meanings among parts and wholes are defined only in relationship to one another
- change is an aspect of all systems and is ever-present throughout any system

The application of the fundamental algorithm of dialectics, thesis-antithesis-synthesis implies the ubiquitous interplay between and among various competing truths. In the rehabilitation process, fundamental, contradictory truths often stand side-by-side and meaning is relativistically rather than absolutely defined. Changes in motor or sensory function due to SCI/D and the consequent limitations around mobility, instrumentality, and sensation often stand squarely beside a therapeutic goal of maximizing activity and maintaining psychosocial role functions.
**DIALECTICAL BEHAVIOR THERAPY**

Table 2. Case Example

| Mr. Davis, 42 years-old, is a single father of three children—a son, 19, and two daughters 15 and 11 respectively. He sustained a work-related, traumatically acquired SCI that resulted in partial paralysis. His mobility is limited and he relies on a walker for support. He is unable to drive because of unpredictable spasticity. Mr. Davis lives in a suburban community with poor public transportation. Mr. Davis experiences painful burning in both his upper and lower extremities that becomes worse when he is walking, typing, holding a telephone, shaving, or using kitchen utensils. Despite all of the aforementioned symptoms, he continues to optimistically explore ways to develop his parenting skills, care for his children, and enhance his communication abilities. The therapy process with Mr. Davis has focused on his parenting skills and abilities. Mr. Davis struggles with the legitimacy of this goal (antithesis), frequently challenging it due to his lack of mobility, his heightened dependency which is ego-dystonic, and the omnipresent pain he feels in his hands. Therapeutic tasks have included reframing the definition of parenting in the context of his SCI, validating his flexibility as he attempts new behaviors, employing structural changes by creating new schedules, and assigning chores to the children using behavioral charting. It has also involved the application of problem-solving techniques he has learned in therapy, and the use of self-management strategies including mindfulness-based relaxation techniques. These activities have been supported by family therapy.

In the context of normative adolescent resistance, everyone in the family knows that the changes and adaptations the family must make to remain functional will be ever-evolving. The dialectical process between Mr. Davis, his children, and their therapist serves as a co-created space that enables an exploration of the outcomes of his parenting activities and the development of a new wholeness (synthesis). The new, co-created synthesis embraces new forms and patterns of effective family functioning. The co-created dialectical therapeutic space has become a place to examine Mr. Davis’s life as he adapts to his SCI and the changes it triggered, while he integrates therapeutic modifications.

**MINDFULNESS, RADICAL ACCEPTANCE AND CONSTRUCTING THE FUTURE**

Managing the stressors that are part of creating a new, forward-looking narrative of one’s life requires contemplative “eyes open” awareness. Participation on the part of the client and the therapist are also essential ingredients. Many studies examining mind/body medicine over the past 30 years have demonstrated that it is possible to arrive at some level of peace, and that greater health, well-being, and happiness can be achieved even in the face of enormous challenges and difficulties (Kabat-Zinn, 2005). Central to the practice of mindfulness are the intentional, non-judgmental processes of observing, recognizing, and effectively becoming more knowledgeable and skillful with self-management. Mindful awareness in DBT is a core clinical competency in that being present and able to identify and observe the accuracy or inaccuracy of a client’s or therapist’s thinking is essential to reframing and skillfully implementing effective future action.

A key element in mindfulness techniques is a unique form of validation, that is, an inner orientation that has become known as radical acceptance (Kabat-Zinn, 2005, p. 61). In DBT, individuals are taught to radically accept life by entering the moment just as it is—without judgment—while, at the same time, they are taught strategies and skills to manage the evolving experiences that are part of living in the moment. This means that people with SCI/D are asked to examine themselves, their being, their injury or disease, and its sequelae by “being with them.” As Kabat-Zinn points out:

*It takes a huge amount of fortitude and motivation to accept what is—especially when you don’t like it, and then work wisely and effectively—as best you possibly can with the circumstances you find yourself in and with the resources at your disposal, both inner and outer, to mitigate, heal, redirect and change what can be changed.* (p. 407)

Thus, radical acceptance is active engagement in rehabilitation, activities of daily living, and emotional healing—while at the same time acknowledging the limits that all human beings face—regardless of being temporarily able-bodied or permanently living with an acknowledged disability.

**DBT STRATEGIES AND SCI/D**

Linehan’s (1993) seminal work was used to frame the assumptions that we made about our clients with SCI/D. The assumptions and conclusions, though by no means
Table 3. Assumptions and DBT Interventions

<table>
<thead>
<tr>
<th>Assumptions</th>
<th>DBT Intervention</th>
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<tbody>
<tr>
<td>SCI rehab clients do the best they can</td>
<td>Validation strategies</td>
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<tr>
<td>Clients need to learn new coping skills</td>
<td>Targeted skill training</td>
</tr>
<tr>
<td>Clients engage in self-management</td>
<td>Mindfulness techniques and radical acceptance</td>
</tr>
<tr>
<td>Life with SCI/D feels unbearable</td>
<td>Cognitive strategies for hopelessness/helplessness</td>
</tr>
<tr>
<td>Bio-psychosocial factors apply</td>
<td>Treatment addresses whole person</td>
</tr>
<tr>
<td>Clinicians &amp; clients will face difficult moments</td>
<td>Offer consultative resources for both groups</td>
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exhaustive, provide the means to begin to select the DBT strategies best suited for psychotherapy with an SCI/D population.

Having identified some basic assumptions about clients with SCI/D, we now turn to the rationale for mindfulness skill training and cognitive behavioral strategies that are at the core of DBT. The goals of skill training are to improve distress tolerance, decrease behaviors that interfere with therapy, and to enhance personal effectiveness. It is important to note that all skill training occurs in a context that validates the client and their participation in the treatment process; it emphasizes one’s capabilities as the means to becoming a better self-manager. Clinicians applying DBT principles, in the context of rehabilitation or coping with SCI/D, help the client to observe, identify, classify, and modify dysfunctional or erroneous thoughts and behaviors in the service of fulfilling the goals of a co-created plan of care.

**STAGES OF DBT WITH SCI**

The authors have conceptualized a 4-step stage oriented approach influenced by a model outlined by LaRocca, Kalb, and Kaplan (1983) that is useful in implementing DBT with clients with SCI/D.

**Stage I Uncertainty**

Within days of the mechanism of injury or identification of signs and symptoms, the primary focus of both patients and clinicians is on establishing a diagnosis, medical stabilization, and crisis management. While medical diagnosis and care are the primary focus during Stage I, behaviors that may become targets for intervention can include intense rage, grief, and anxiety. Additionally, resistance to participating in rehabilitative activities, and life-threatening activity including high risk suicidal or parasuicidal thinking or behavior may be present. Withdrawal and verbally abusive interactions with members of the treatment team or the client’s family may also be a focus of therapeutic attention in the early stages of treatment and throughout the rehabilitation process. In the case of the diagnosis of a spinal cord disease like MS, denial that takes the form of persistent attempts at maintaining pre-morbid activity levels, failure to acknowledge fatigue and its risks, refusing to seek workplace accommodations, as well as losses related to mobility, vision, speech, cognitive difficulties, bowel and bladder control, emotional functioning, and balance could all be foci of the stabilization processes of Stage I.

**Stage II Acceptance**

The use of DBT with clients with SCI/D focuses on helping clients to restore a sense of hopefulness and begin to manage the emotional and behavioral problems associated with daily living. DBT interventions in Stage II may focus on enhancing emotional regulation, improving self-management by teaching self-observation, describing skills, and informed participation in treatment and life.

**Stage III Adaptation**

In this stage, the client confronts challenges related to radical acceptance and being present in a manner that allows for the acknowledgement of the dialectical conflicts unique to the individual. The introduction of mindfulness techniques, including skills to see reality without harsh judgment, letting go of attachments that obstruct paths to healing, and moving toward finding a personal via media, or middle way, occur as part of adaptation. During the adaptation stage, the therapist and client work to enhance abilities to see the whole as well as its parts. Therapeutic learning focuses on ways to cope with the dialectical conflicts implicit in competencies and deficits, challenges, and victories and finally trust in relationships as compared to the mistrust that is often felt because of feeling like one is less than one was prior to being injured or ill. Success in Stage III
with clients with SCI/D thus relies upon radical acceptance and beginning to redefine self and the future in the context of strengths and weaknesses associated with injuries or diseases.

Stage IV Emergence
Stage IV, the emergence stage, addresses emotional, behavioral, and philosophical movement toward a broader perspective that places the illness or injury and its sequela into a context within the individual’s life. In this stage adaptation is framed and accepted as an ongoing, lifelong commitment that requires constant investment emotionally, medically, and spiritually. Broadening the treatment team to include client-chosen spiritual teachers or leaders may be a useful adjunct in this stage.

SUMMARY AND CONCLUSIONS
The rehabilitation team can utilize principles of DBT across the therapeutic spectrum. Through collaboration and application of mindfulness techniques, cognitive behavioral strategies, and skill training in self-management, clients with SCI/D can enhance their capabilities, improve motivation, generalize new learning from one context to another and improve their relationships. Once clinicians are trained in applying DBT principles to their work with SCI/D, they may feel less isolated and benefit from the use of consultative back-up as a normative resource. Additionally, DBT-trained clinicians will be employing psychotherapeutic techniques that have been empirically tested with complex patients in a variety of settings. Dialectical Behavior Therapy particularly lends itself to implementation in Model Systems Programs where its efficacy could be studied as an innovative form of treatment.

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