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TREATING FAMILY MEMBERS: THE EFFECTIVENESS OF A FAMILY-
ORIENTED DIALECTICAL BEHAVIOR THERAPY PROGRAM

by

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A Dissertation submitted to the Faculty of the Graduate School,
Marquette University,
in Partial Fulfillment of the Requirements for
the Degree of Doctor of Philosophy

Milwaukee, Wisconsin

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ABSTRACT
TREATING FAMILY MEMBERS: THE EFFECTIVENESS OF A FAMILY-
ORIENTED DIALECTICAL BEHAVIOR THERAPY PROGRAM

Melissa L. Miller, M.S.

Marquette University, 2013

Borderline Personality Disorder (BPD) is a severe emotion regulation disorder that, according to the biosocial theory, is developed and maintained through transactions that occur between biologically vulnerable persons and their environment. The family members of persons with BPD may experience many deleterious consequences as a result of their relative's illness, including both objective and subjective forms of burden. Dialectical Behavior Therapy (DBT) was originally developed as a comprehensive treatment for persons with BPD, and new programs designed specifically to treat family members are emerging. These programs aim to help family members cope with their own stressors, as well as help them to learn more effective ways to communicate and interact with their relatives with mental illness. The effectiveness of a family-oriented DBT program called Family Skills was evaluated. It was hypothesized that family members' scores on the Beck Depression Inventory – II (BDI – II), Beck Hopelessness Scale (BHS), Brief Symptom Inventory (BSI), and Burden Assessment Scale (BAS) would decrease from pre-treatment to post-treatment. Descriptive analyses indicated great variability in the functioning of family members at pre-treatment, with females generally reporting more symptomology than males. Statistical analyses showed that depression, hopelessness, and interpersonal sensitivity significantly decreased from pre-treatment to post-treatment. The clinical significance of individual participant changes was also examined, and clinically significant changes were noted in depression, hopelessness, and interpersonal sensitivity. These findings are consistent with previous research in this area and provide further information regarding the utility of family-oriented DBT programs. The theoretical underpinnings of these changes are discussed, and suggestions for future research are offered.

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Treating Family Members: The Effectiveness of a Family-Oriented Dialectical Behavior Therapy Program

Borderline Personality Disorder (BPD) is an emotion regulation disorder that severely impacts both persons with the disorder and those around them, and treatment can help both persons with BPD and their family members. The biosocial theory suggests that the symptoms of the disorder are developed and maintained through transactions that are experienced as invalidating between biologically vulnerable persons and those in their environment (such as family members; Linehan, 1993a; Linehan, 1993b). Dialectical Behavior Therapy (DBT) was initially developed as a comprehensive treatment for persons with BPD. More recently, DBT-inspired programs have been developed to treat family members of persons with BPD, as these family members may experience various forms of burden and distress as a result of their relative's illness. The foundations and outcomes of existing programs are described, and a new study evaluating the effectiveness of a family-oriented DBT program is presented.

Borderline Personality Disorder (BPD)

BPD is characterized by the American Psychological Association (APA, 2000, p. 710) as:

- A pervasive pattern of instability of interpersonal relationships, self-image, and affects, and marked impulsivity beginning by early adulthood and present in a variety of contexts, as indicated by five (or more) of the following:
- (1) frantic efforts to avoid real or imagined abandonment **Note:** Do not include suicidal or self-mutilating behavior covered in Criterion 5.
 - (2) a pattern of unstable and intense interpersonal relationships characterized by alternating between extremes of idealization and devaluation
 - (3) identity disturbance: markedly and persistently unstable self-image or sense of self
 - (4) impulsivity in at least two areas that are potentially self-damaging (e.g., spending, sex, substance abuse, reckless driving, binge eating) **Note:** Do not include suicidal or self-mutilating behavior covered in Criterion 5.
 - (5) recurrent, suicidal behavior, gestures, or threats, or self-mutilating behavior

- (6) affective instability due to a marked reactivity of mood (e.g., intense episodic dysphoria, irritability, or anxiety usually lasting a few hours and only rarely more than a few days)
- (7) chronic feelings of emptiness
- (8) inappropriate, intense anger or difficulty controlling anger (e.g., frequent displays of temper, constant anger, recurrent physical fights)
- (9) transient, stress-related paranoid ideation or severe dissociative symptoms.

Prevalence rates suggest that BPD is present in 2% - 5.9% of the general population, and the disorder is often comorbid with other conditions (APA, 2000; Grant et al., 2008). Initially, the disorder was thought to be stable over time, leading to a lifetime of symptoms and problems; however, there is new evidence suggesting that persons with BPD may respond to treatment. Remission rates for BPD after two years have been documented to be between 28% - 39% (Grilo et al, 2004; Shea & Yen, 2003; Zanarini, Frankenburg, Hennen, Reich, & Silk, 2006).

The biosocial theory. In 1993, Marsha Linehan published a comprehensive theory, known as the biosocial theory, about the development, maintenance, and treatment of BPD. Conceptually, Linehan (1993a) reorganized the DSM diagnostic criteria of the disorder into the following five domains of dysregulation: emotional, behavioral, cognitive, sense of self, and interpersonal. She argued that emotional dysregulation is the core feature of BPD and the other areas of dysregulation result from the inability to effectively regulate intense emotional experiences.

Areas of dysregulation. Emotional dysregulation occurs when someone is unable to change (or accept) the various aspects of an emotional experience and is experiencing such high negative emotional arousal that the experience interferes with the person's functioning (Fruzzetti, Crook, Erikson, Lee, & Worrall, 2009; Fruzzetti & Iverson, 2006). This encompasses an excess of negative emotional arousal, trouble

controlling attention (especially away from the emotional stimuli), cognitive distortions, impulsive behavior, and difficulty behaving in a manner consistent with one's long-term goals (Crowell, Beauchaine, & Linehan, 2009; Fruzzetti et al., 2009). Behavioral dysregulation includes impulsive behaviors, such as substance use or spending, and intentional self-harm or suicidal ideation and gestures. These behaviors often function as escape-oriented solutions to help modulate intense emotions in the short-term or to elicit help from the environment in regulating intense emotions (Brooke & Horn, 2010; Feigenbaum, 2010; Linehan, 1993a; Linehan, 1993b; Yen, Zlotnik, & Costello, 2002). Cognitive dysregulation involves depersonalization, dissociation, and paranoia, as well as decreased attention, concentration, and problem-solving abilities (Crowell et al., 2009; Fruzzetti, Shenk, & Hoffman, 2005; Linehan, 1993a). Sense of self dysregulation comprises identity disturbances (such as the lack of a sense of self), chronic feelings of emptiness, and low self-efficacy, self-confidence, and self-acceptance (Crowell et al., 2009; Linehan, 1993a). Interpersonal dysregulation includes unstable relationships, fears of abandonment, inability to tolerate small amounts of distress or interpersonal conflict, and vacillation between idealization and devaluation (Fruzzetti & Fruzzetti, 2003; Fruzzetti et al., 2005; Linehan, 1993a). These domains of dysregulation are believed to develop as a result of transactions between the individual and the environment.

Transactional model of symptom development. The biosocial theory is transactional, in that it accounts for how individual and environmental characteristics influence one another reciprocally to result in the development of the symptoms that are associated with BPD. Specifically, the theory describes how biological

vulnerability inherent in these persons, their sensitivity to emotional stimuli and inability to regulate emotions, and chronic experiences of invalidation from the environment transact over time into the emotional dysregulation that is at the core of the disorder.

Persons who will eventually be diagnosed with BPD are believed to have underlying, biologically-based, emotional vulnerabilities. Linehan (1993a; 1993b) describes a three-fold vulnerability, including increased sensitivity to emotional stimuli, increased reactivity in response to emotional cues, and a slower return to emotional baseline. Emotionally vulnerable persons are prone to experiencing intense emotions, and some persons may also lack the ability to sufficiently identify and regulate their emotions. Because these persons are, at times, not able to correctly identify and regulate their emotional experiences internally, their ability to communicate their feelings to others in the environment and effectively seek support is greatly reduced.

Invalidation of emotionally vulnerable persons may occur quite frequently, as the experiences and abilities of these persons may be quite different from those in their environment (thus, difficult to understand) or because these persons may inaccurately communicate their experiences (Fruzzetti, 2006; Fruzzetti et al., 2005). Furthermore, invalidation is more likely to occur in situations in which the expression is unexpected, the demand for help is too high, or situational resources are not available (Crowell et al., 2009; Fruzzetti et al., 2005). There are many deleterious consequences of this invalidation to emotionally vulnerable persons. Invalidation of internal experiences (such as emotions) can exacerbate emotionally vulnerable persons' deficits in recognizing and

correctly labeling emotions (Fruzzetti et al., 2005; Linehan, 1993a; Wagner & Linehan, 1997). It can also lead to patterns of inhibition or avoidance of communicating emotions or can, paradoxically, lead to heightened emotional arousal and expression (in an effort to receive validation; Linehan, 1993a; Wagner & Linehan, 1997). Over time, this can develop into a pattern of vacillation between emotional inhibition and extreme displays of emotion, which can further increase vulnerability to emotional stimuli and deficits in emotion regulation, as well as increase the likelihood of invalidation from the environment (Fruzzetti et al., 2005; Linehan, 1993a).

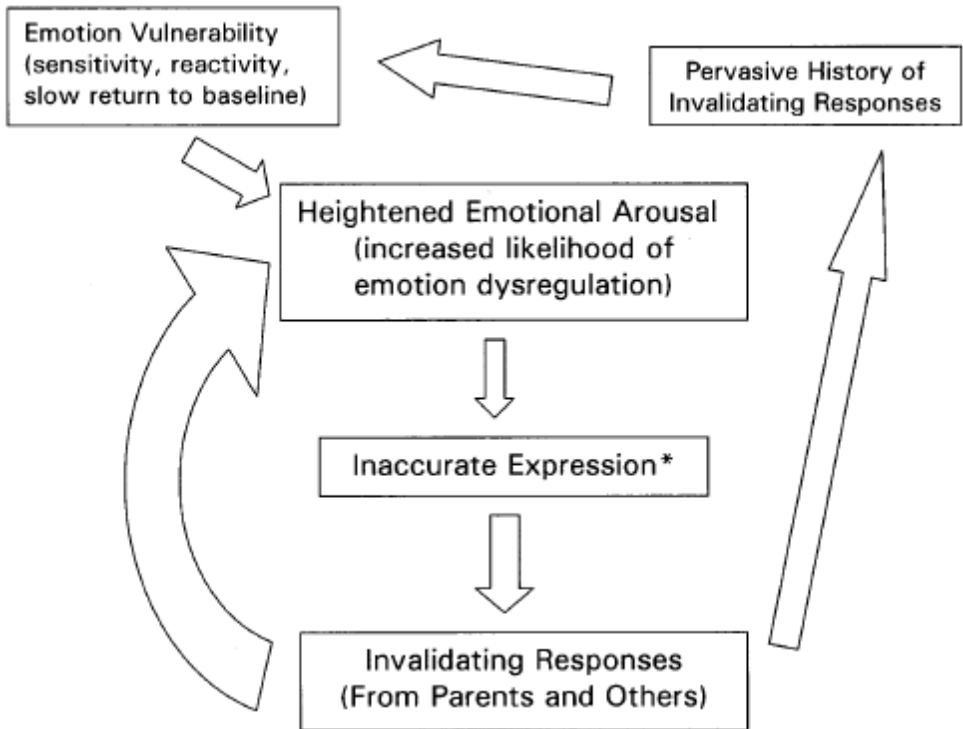
BPD families. There are various types of transactions between the aforementioned factors, all of which can potentiate the development of BPD. Some persons have less emotional vulnerability, but they grow up in highly disorganized, chaotic, abusive, or neglectful environments, such as those where sexual or physical abuse, substance use, or severe financial concerns are present in the home (Crowell et al., 2009; Linehan, 1993a). In these cases, the person transacts with the dysfunctional environment in such a way that emotional vulnerability develops over time. In other circumstances, a person may be so emotionally sensitive to begin with that even effective parenting doesn't lower emotional vulnerability to levels that allow for healthy coping to develop (Crowell et al., 2009; Fruzzetti et al., 2005; Linehan, 1993a). At other times, the emotionally vulnerable person may require more resources (such as time, attention, or instruction) than the caregivers have available due to situational demands, other children, or their own problems (Crowell et al., 2009). There also may be a poor fit between the emotionally vulnerable person and the environment, such that the transactions over time create and maintain emotional vulnerability and subsequent emotional dysregulation

(Fruzzetti & Fruzzetti, 2003; Hooley & Dominiak, 2002). This continual cycle of emotional dysregulation, inability to regulate emotions, and invalidation from the environment creates the symptom levels that are considered to be clinically significant (that is, these patterns contribute to the eventual diagnosis of BPD).

Family involvement in the maintenance of BPD symptoms. The problematic transactions that occur within the family environment can continue to exacerbate the emotion dysregulation that is found in persons with BPD and the invalidation that they receive from the environment. Fruzzetti and colleagues (Fruzzetti, 2006; Fruzzetti et al, 2005) have provided a model, theorizing how these transactions continue to impact persons with BPD over time (please see Figure 1). As described above, the emotional vulnerability and lack of emotion regulation skills present in persons who will eventually receive the diagnosis of BPD contribute to increased emotional arousal and potential emotion dysregulation. Due to the lack of accurate expression of emotional experiences during interpersonal interactions, these persons may not convey their emotional experiences at all or may do so inaccurately or ineffectively. Because of a lack of skill in communicating their life experiences, persons with BPD continue to receive messages from others that may be experienced as invalidating. This may increase subsequent levels of emotional arousal and potential dysregulation in similar interpersonal situations and, thus, contribute to a pervasive history of invalidation and the successive exacerbation of emotional vulnerability. These transactions continue over time and contribute to the maintenance of the emotion dysregulation and other areas of dysregulation that are found in persons with BPD.

Figure 1

The Transactional Model of Emotional Dysregulation and Invalidating Responses.



Note. *includes behavior. (Fruzzetti, Shenk, & Hoffman, 2005).

Dialectical Behavior Therapy (DBT). DBT is an intensive, highly structured, cognitive-behavioral treatment that incorporates mindfulness, dialectical thinking, and the teaching of skills to address assumed skill deficits (cf. Linehan, 1993a; Linehan, 1993b). Comprehensive DBT includes five components: (1) weekly individual therapy sessions (to enhance the motivation of the person with BPD), (2) weekly group skills training sessions (to help persons with BPD acquire new abilities), (3) telephone consultation with the individual therapist as needed between sessions (for crisis management and skills generalization), (4) weekly consultation meetings that the therapist attends with other members of the treatment team (to keep the therapist oriented to the theoretical foundations of the treatment), and (5) ancillary treatments, such as medications or other forms of treatment (to augment the therapy). DBT has been demonstrated to be effective at reducing suicidal, self-harm, and mood-dependent behaviors and improving global functioning in persons with BPD, and it is considered to be an empirically-supported treatment for BPD (Linehan, Armstrong, Suarez, Allmon, & Heard, 1991; Linehan, Heard, & Armstrong, 1993).

Summary

BPD is a severe disorder, although research has shown that the course of the disorder is not as stable as was once believed. The biosocial theory provides a conceptualization in which transactions between the individual and the environment lead to the development of clinically significant symptoms. DBT was based upon this theory, and the treatment has been demonstrated to be effective at treating the primary areas of dysregulation that are associated with BPD.

Family Members of Persons with BPD

Family members (which is defined broadly to include siblings, parents, spouses, and children, unless otherwise noted) of persons with BPD must deal with unique challenges and stressors as a result of their relative's illness. Hoffman, Fruzzetti, and Buteau (2007) noted that "family members often are on the front lines serving as informal case managers, or as the de facto crisis intervention workers who handle calls of suicidal behavior and emergencies" (p. 70).

Over the years, a great deal of literature has discussed the strain that is put on family members of persons with severe or chronic mental illnesses. Burden is commonly experienced by family members of persons with a mental illness, and this factor can be conceptualized as having both objective and subjective components (Schene, 1990). Specifically, objective burden refers to the tangible consequences of having a relative with a mental illness, while subjective burden encompasses the distress and emotional consequences that family members report (Schene, 1990). Research has elucidated the various forms of burden that are experienced by family members of persons with BPD.

Receiving the diagnosis. Many family members of persons with BPD may have spent years watching their relative exhibit maladaptive (and often frightening) behaviors, such as deliberate self-harm and suicide attempts. BPD is difficult to diagnose because of the clinical heterogeneity of the disorder, the variety of conditions that are often comorbid with the disorder, and myths and stereotypes about the disorder and its treatability. Persons with BPD may have received many other diagnoses throughout the course of their life (Crowell et al., 2009; Hersh, 2008). Because of previously accepted

diagnoses, persons with BPD or their family members may be hesitant to embrace an accurate BPD diagnosis (Giffin, 2008; Lefley, 2005).

Of the family members that do accept the diagnosis of BPD, many initially attempt to seek out as much information about the disorder as they can (Penney & Woodward, 2005). Accessing current information can be challenging without the guidance of professionals, and obsolete information can be quite discouraging or difficult to understand, which may leave family members feeling worse (Buteau, Dawkins, & Hoffman, 2008; Hoffman, Buteau, Hooley, Fruzzetti, & Bruce, 2003; Porr, 2010). Furthermore, the idea of having a family member with a potentially chronic illness can be quite discouraging, and many family members are left wondering about long-term costs to themselves and their relatives (Hoffman et al., 2005; Lefley, 2005; Penney & Woodward, 2005).

Interacting with the mental health system. Persons with BPD frequently utilize health services (Goodman et al., 2010). At times, family members of persons with BPD may have to help their relative navigate through the mental health, social service, criminal justice, and legal systems with little or no help from others (Lefley, 2005). Because of privacy laws and regulations, family members may not be given much information about their relative's condition or care (Buteau et al., 2008). Persons with BPD may be admitted or discharged from the hospital without consultation with family members, although they may be returning from the hospital to the care of their families (Giffin, 2008). Furthermore, inconsistency between hospitals, especially regarding level of care, treatment standards, and communication, can be especially frustrating for family members (Buteau et al., 2008).

When family members are invited to therapy or treatment planning sessions, this is sometimes only to provide additional information about their relative with BPD. Family members may be seeking information, support, direction, or comfort for themselves, and they may not receive these from their relative's mental health professionals (Giffin, 2008). Additionally, some family members report feeling intimidated by health care professionals, especially when an entire treatment team is present (Giffin, 2008). Moreover, some family members worry that they and their relative with BPD are being judged negatively by health professionals (Buteau et al., 2008; Hoffman et al., 2005).

Financial costs. There are often direct financial costs associated with having a relative with BPD. Outpatient treatments, inpatient hospitalizations, impulsive spending habits, or the inability to maintain regular employment can all lead to large amounts of debt accrued by persons with BPD, and sometimes family members are compelled to provide fiscal support (Buteau et al., 2008; Lefley, 2005). This can lead to family members going into debt themselves, having to take extra jobs, or even selling their homes to help support their relative (Buteau et al., 2008; Hoffman et al., 2005).

Disruption of personal life. There also may be indirect costs, such as frequent disruptions in the lives and routines of other family members (Giffin, 2008). Time and energy may be taken away from other relatives (such as siblings), which may lead to resentment or feelings of jealousy (Giffin, 2008; Lefley, 2005). Furthermore, family members may disagree about their levels of involvement in the care and support of their relative with BPD, which can lead to arguments and further strain (Giffin, 2008).

Disruption of social relationships. Family members may also notice changes in their social relationships and social support as a result of having a relative with BPD. They may find that others are not able to relate to the struggles they face with their relative, others may tire of hearing about their struggles, or conflicts may arise if family members are criticized for their involvement with their relative with BPD (Buteau et al., 2008). Once again, family members also may lack the time, energy, and resources to invest in their other social relationships because so much is given to their relative with BPD (Lefley, 2005). Changes in social support can leave family members feeling even lonelier and more isolated (Penney & Woodward, 2005).

Emotional consequences. Family members of persons with BPD often experience subjective burden, or emotional consequences, as a result of their relative's illness. It can be incredibly difficult to watch a relative with BPD endure so much psychological pain (Penney & Woodward, 2005; Porr, 2010). Family members may blame themselves for their relative's mental illness or for not being able to do more to help (Giffin, 2008; Hoffman et al., 2005). This can result in many emotional consequences, including (but not limited to) anxiety, guilt, anger, frustration, despair, and hopelessness (Buteau et al., 2008; Lefley, 2005; Porr, 2010). Family members may also feel embarrassed, ashamed, or judged. They may find themselves in situations that they find embarrassing (such as a relative's extreme emotional display in public) or they may fear being judged as responsible for their relative's disorder and ineffective behaviors that result from the impulsive and unskilled choices made (Hoffman et al., 2005; Lefley, 2005).

Psychological symptoms. There is a small amount of research that has examined the general levels of psychological symptomology that are found in family members. For examples, Scheirs and Bok (2007) administered the Symptom Check List (SCL-90) to a Dutch sample of 64 family members of persons with BPD. They found that these relatives had significantly higher mean scores than the general Dutch population on the following SCL-90 symptom dimensions: anxiety, agoraphobia, depression, somatization, insufficiency of thinking and acting, distrust, hostility, and sleeping problems. Though they did not examine clinically-significant symptomology, they did demonstrate that family members of persons with BPD do experience more mental health concerns than the general population. It is not clear from this study if relations with a relative with BPD impact this distress or if the distress is present for other reasons. Current theory suggests that some combination of these factors transact over time to influence distress.

Family Member Involvement in Treatment

As noted previously, having a relative with BPD can put strain on relationships and can be particularly stressful for the individual. Because of this, family members are more frequently becoming involved in treatment. There are two primary reasons why family members may seek treatment: (1) to help both their relative with BPD and themselves by changing the nature of their relationships and interactions, and (2) to help themselves cope with the stress that is associated with having a family member with BPD. The type of treatment that family members choose to participate in will greatly depend on their motivation for treatment (Fruzzetti, Santisteban, & Hoffman, 2007).

There are various ways in which family members can become involved in treatment, as outlined by Fruzzetti and Boulanger (2005). Initially, family members may

choose to seek out informational resources, such as books or internet sites. These materials can provide family members with general information about BPD, the treatment of the disorder, and recommendations specific for family members. Family members may also agree to participate in one or more of their relatives' individual DBT sessions to resolve a particular problem or provide their relative with an opportunity to practice skillful behavior. More recently, DBT-inspired programs have been developed to specifically include family members of persons with BPD. There are two primary types of DBT treatment programs for family members of persons with BPD, family psychoeducation and family education.

Family psychoeducation. Family psychoeducation programs are typically led by trained mental health professionals, and participants include both family members and persons with BPD. These programs provide an opportunity for persons with BPD and their family members to work together to improve their relationships, as well as their individual well-being (Fruzzetti et al., 2007). For persons with BPD, family member participation in treatment can be construed as highly validating and supportive, a demonstration of investment in their health and well-being (Hooley & Hoffman, 1999). Family members also perceive this collaborative treatment as validating and supportive, as well as constructive and empowering (Hoffman, Fruzzetti, & Swenson, 1999; Penney, 2008).

Family members can help their relative with BPD by learning the skills necessary to be more validating (and less invalidating), as this can soothe emotional arousal and even begin to reverse the cycle of emotion dysregulation and inaccurate expression (Fruzzetti, 2006; Fruzzetti et al., 2005). Furthermore, family members can learn to model

appropriate behavior and self-care for their relative with BPD, and they can develop the skills necessary to help coach them through crises. Developing these abilities, in turn, serves to help increase the sense of mastery and efficacy that family members have (Hoffman et al., 2007; Hoffman et al., 2005). In addition, family members can improve their own well-being, by learning, in a safe environment, how to set limits, validate their own experiences, and prioritize their own health (Penney & Woodward, 2005). Finally, by participating in treatment, family members have a chance to receive understanding, support, and encouragement from others (Fruzzetti & Boulanger, 2005; Hoffman et al., 1999).

Dialectical Behavior Therapy –Family Skills Training. Dialectical Behavior Therapy-Family Skills Training (DBT-FST) is a six-month program that was developed by Hoffman et al. (1999) as a family psychoeducation intervention designed for persons with BPD and their family members. DBT-FST was designed to supplement individual treatment (that is, individual DBT). The program helps family members of persons with BPD to learn the theory, language, and skills that their relative is learning in treatment. The first two weeks are spent on psychoeducation, and, in the weeks that follow, the first 45 minutes of each session are didactic, while the last 45 minutes are utilized to discuss relevant issues and practically apply the skills that were learned. Five modules of skills are taught: mindfulness, interpersonal effectiveness, emotion regulation, distress tolerance, and validation.

Program evaluation data. To date, there have been no published studies evaluating the effectiveness of DBT-FST. In a review of family member involvement in DBT, Fruzzetti et al. (2007) provide anecdotal evidence for the effectiveness of these

programs. They note that both persons with BPD and their family member describe high satisfaction with the program and even request to continue with the program after their initial six month commitment is fulfilled. Research is still needed to empirically determine the utility of this program.

Family education. In contrast to family psychoeducation programs, family education programs are designed specifically for family members, and they focus solely on improving the well-being and coping skills of family members (Fruzzetti & Boulanger, 2005). Though not an explicit focus of these programs, many family members do note that benefits in relationships with relatives with BPD may occur as a function of their own increase in skills and well-being (Penney, 2008). These programs are typically led by former group members (family members of persons with BPD), and the groups only consist of family members.

Family CONNECTIONS. Family CONNECTIONS (FC) is a family education program that was developed to specifically help family members of persons with BPD (Hoffman et al., 2007; Hoffman et al., 2005). The 12-week manualized program consists of weekly two hour sessions in which up to 12 families participate. During each session, leaders check-in with each member, review skills that were learned the week before, answer questions, and facilitate discussion. The program is largely based on the theory and skills associated with DBT (with the addition of the validation skills adapted from Fruzzetti, 2006). The FC program comprises six modules: introduction, family education, relationship mindfulness skills, family environment skills, validation skills, and problem management skills.

Program evaluation data. To date, two studies evaluating the effectiveness of the traditional FC program have been published (Hoffman et al., 2007; Hoffman et al., 2005). Hoffman and colleagues (2005) examined how burden, perceived burden, depression, grief, and mastery changed in 44 participants over the course of the 12 week FC program and during a three-month follow-up period. They found that family members experienced significant decreases in burden and grief, as well as significant increases in mastery. Burden scores continued to decrease during the follow-up period, and the improvements in grief and mastery were maintained (though no further changes were found). They found no significant changes in depression or perceived burden over the course of treatment or during the follow-up period.

Hoffman and colleagues (2007) attempted to replicate the aforementioned findings in a study of 55 FC participants. They found that over the course of the 12 weeks, overall burden, subjective burden, objective burden, grief, and depression decreased, while mastery increased. Grief continued to decrease and mastery continued to increase during the follow-up period. No changes during the follow-up period were found for depression or burden. With the exception of depression, the results of the 2005 study were replicated. Hoffman et al. (2007) explain the differing results for depression by noting that their more recent study had more participants (allowing for more statistical power) and their participants had higher depression levels prior to treatment (which allowed for greater change to occur over the course of treatment).

Hoffman et al. (2007) also examined gender differences in the later FC study. They found that prior to the program, women reported higher levels of grief and subjective burden than men. There were no differences in any of the other psychological

variables. Upon completion of the FC program, women still had significantly higher levels of grief than men; however, these differences did not remain significant after pre-treatment levels of the variable were controlled for. These types of programs for family members are a unique and promising new area of clinical research, and future work in this area is warranted to determine the potential benefits.

Summary

BPD is a severe disorder that is developed through transactions between biologically vulnerable persons and an invalidating environment. Having a family member with BPD is associated with various forms of burden, and family members may choose to become involved in treatment in order to help their relative with BPD, help themselves learn to cope more effectively, or a combination of both. There are currently two published variations of DBT-inspired treatment options for family members. There is a limited amount of empirical evidence supporting the effectiveness of a family education program, and that research was conducted by the creators of the program. Further research is needed to determine the impact of DBT programs for family members. Specifically, empirical evidence is needed to document whether or not variations of these programs are also effective, and whether or not other psychological variables change over the course of treatment.

The Present Study

The present study evaluated the effectiveness of a family-oriented DBT program that combines features of both family psychoeducation and family education programs. The program, hereafter referred to as Family Skills, was led by a trained mental health professional and was comprised solely of family members of persons with persistent

mental illness. The present study expands upon the existing research in this domain by documenting the effects of a professional-led program and by examining a broader range of psychological variables. Data about pre-treatment and post-treatment levels of symptomology were collected and were analyzed to determine the potential impact of Family Skills.

As mentioned previously, studies of similar programs (Hoffman et al., 2007; Hoffman et al., 2005) have demonstrated a positive impact on program participants. Thus, it is hypothesized that measures of depression, hopelessness, general symptomology, and burden will decrease from pre-treatment to post-treatment.

Specifically, the following hypotheses are made:

- 1) Depression symptoms will decrease from pre-treatment to post-treatment.
- 2) Hopelessness will decrease from pre-treatment to post-treatment.
- 3) Global levels of psychological symptomology will decrease from pre-treatment to post-treatment. Furthermore, interpersonal sensitivity and hostility are predicted to decrease.
- 4) Overall burden will decrease from pre-treatment to post-treatment. Furthermore, the burden subscales of disrupted activities, personal distress, time perspective, guilt, and basic social functioning will also decrease.

Method

Participants

Participants included 70 individuals who completed a nine-session (24 content hours) DBT Family Skills program at the Center for Behavioral Medicine, a private practice mental health center with a comprehensive DBT program. The total group of participants included six different cohorts of individuals who completed the program between 2005 and 2011. The sample comprised 40 females (57.1%) and 30 males (42.9%). Ages ranged from 24 to 73. Participants were primarily Caucasian (92.5%), and the majority of participants (81.0%) were the parent of an individual with mental illness. Most participants attended the program with another member of their family (as the price of the program was the same for either one or two family members). Please see Table 1 for details of the demographic characteristics of the participants.

Table 1

Participant Characteristics

Characteristic	n	%
Gender		
Female	40.0	57.1
Male	30.0	42.9
Race		
Caucasian	62.0	88.6
American Indian or Alaska Native	3.0	4.3
Hispanic or Latino	2.0	2.9
Unreported	3.0	4.3
Education		
High School	13.0	18.6
Some College	3.0	4.3
College Degree	26.0	37.1
Graduate Degree	24.0	34.3
Unreported	4.0	5.7
Relation to Family Member with Mental Illness		
Spouse or Partner	9.0	12.9
Parent	47.0	67.1
Sibling	1.0	1.4
Grandparent	1.0	1.4
Unreported	12.0	17.1
Family Member in DBT		
Yes	37.0	52.9
No	30.0	42.9
Unreported	3.0	4.3
Family History of Mental Illness		
Yes	44.0	62.9
No	21.0	30.0
Unreported	5.0	7.1

Note. “Unreported” refers to items that were left blank.

Measures

Demographic information. Participants completed a brief form in order to register for the program. This form included basic demographic information, as well as self-report questions related to current distress and motivation for treatment.

Beck Depression Inventory – II. The Beck Depression Inventory – II (BDI – II; Beck, Steer, Ball, & Ranieri, 1996) is 21-item instrument that examines the intensity of symptoms of depression. Each item consists of four response choices that vary in severity (e.g., “I do not feel sad,” “I feel sad much of the time,” “I am sad all of the time,” and “I am so sad or unhappy that I can’t stand it”), and participants indicate which choice best represents how they have been feeling. The BDI – II has been shown to have satisfactory internal consistency (Cronbach’s alpha = 0.91), as well as construct validity. One-week test-retest reliability has been shown to be 0.93 (Beck, 1996).

Beck Hopelessness Scale. The Beck Hopelessness Scale (BHS; Beck, Weissman, Lester, & Trexler, 1974) is a 20-item questionnaire that evaluates persons’ feelings of hopelessness, or negative thoughts about self and the future. The items of the BHS are presented as statements (e.g., “my future seems dark to me”), and participants are asked to indicate whether the statement is “true” or “false.” The BHS has been demonstrated to have adequate internal consistency (Cronbach’s alpha = 0.93), and the concurrent and construct validity of the scale have been shown via comparison with clinician ratings. Test-retest reliability for a one-week period has been documented at 0.69 (Beck & Steer, 1988).

Brief Symptom Inventory. The Brief Symptom Inventory (BSI; Boulet & Boss, 1991; Derogatis & Spencer, 1982) is a 53-item measure that examines various aspects of

psychiatric symptomology. Participants rate the frequency with which they have experienced various symptoms (e.g., “nervousness or shakiness inside”) using a five-point scale from “not at all” to “extremely.” A global severity index is calculated by summing the scores and dividing by the number of items. The measure also consists of nine subscales of symptom dimensions: somatization (SOM), obsessive-compulsive (OC), interpersonal sensitivity (INT), depression (DEP), anxiety (ANX), hostility (HOS), phobic anxiety (PHOB), paranoid ideation (PAR), and psychoticism (PSY). The internal consistency of the BSI subscales has been demonstrated to range from 0.71 (PSY) to 0.85 (DEP). In the present study, the interpersonal sensitivity and hostility subscales were utilized. The two-week test-retest reliability of the interpersonal sensitivity and hostility subscales has been documented to be 0.85 and 0.81, respectively (Derogatis & Melisaratos, 1983).

Burden Assessment Scale. The Burden Assessment Scale (BAS; Reinhard, Gubman, Horwitz, & Minsky, 1994) is a 19-item measure that examines both objective and subjective forms of burden. Participants are asked to indicate the extent to which they have had several experiences over the past six months (e.g., “found the household routine was upset”), and they endorse their responses on a four-point scale ranging from “not at all” to “a lot.” In addition to a total score, this measure also yields five subscales that reflect the specific consequences of burden, including (1) disrupted activities, (2) personal distress, (3) time perspective, (4) guilt, and (5) basic social functioning (which measures impairment in social functioning). The BAS has been demonstrated to have sufficient content validity and internal consistency (Cronbach’s alpha has been demonstrated to range from .89 and .91).

Procedure

Family Skills program. The program consisted of an initial eight-hour workshop, followed by eight, two-hour, biweekly sessions. The format and content of the program is described below.

Program format. The initial eight-hour workshop served to orient family members to the program and to the other family members in the group. Time was spent building commitment to the program, and fostering a sense of support and commonality among the participants. This was accomplished by utilizing ice-breaker activities and highlighting the shared experiences of those in the group. During this workshop, they learned about emotion regulation disorders (with a specific focus on BPD), the biosocial theory, and the components of DBT. Participants were also taught the core mindfulness module and homework related to mindfulness was assigned.

During the first hour of the bi-weekly sessions, homework from the previous session was reviewed. In the second hour of the sessions, a new set of skills was taught and new homework was assigned. The skills were taught and practiced using a variety of methods, including role plays, vignettes, and modeling. The program was led by a DBT-trained psychologist, and co-facilitated by a graduate student DBT therapist. The program participants included family members of persons with mental illness (including parents, spouses, partners, adult children, siblings, and grandparents).

Program content. In addition to the core mindfulness module that was taught during the initial workshop, two bi-weekly sessions were spent on each of the following modules: (1) validation, (2) interpersonal effectiveness, (3) emotion regulation, and (4)

radical acceptance (cf. Fruzzetti, 2006; Fruzzetti et al., 2005, Linehan, 1993b). The last session also included time to review the program and wrap-up.

Core mindfulness. This module introduced participants to the concept of mindfulness, or awareness, and taught about the three states of mind that are central in DBT (that is, emotion mind, reasonable mind, and wise mind). Participants learned the skills necessary to observe, describe, and participate in their lives with awareness, and they also learned how to take a nonjudgmental stance, be one-mindful in their activities, and strive to be effective. These skills were interwoven throughout the rest of the modules, and are central to DBT treatment. Participants were also introduced to the concept of relationship mindfulness, which includes being aware of self and others while interacting.

Validation. The validation module taught participants how to actively work to understand others (and themselves) and how to effectively communicate this understanding. Participants learned about the relationship-enhancing benefits of validation (such as decreased emotional arousal), and they were taught what, when, and how to validate. This module also reviewed the deleterious consequences of invalidation and provided strategies to recover from it.

Interpersonal effectiveness. The interpersonal effectiveness module instructed participants how to prioritize their objectives, maintain their relationships, or preserve their self-respect. This module also focused on disputing myths about relationships, determining the level of intensity when deciding to make requests or decline demands from others, and how to address factors that reduce effectiveness.

Emotion regulation. This module was designed to teach participants how to identify, experience, and express their emotions, as well as determine if their emotions (or the intensity of their emotions) are effective in a given situation. Participants also learned how to reduce unwanted emotions via checking the facts, using opposite action, and problem-solving. Additionally, skills were taught to help reduce vulnerability to negative emotions and to increase the frequency of positive emotions.

Radical acceptance. The primary focus of this module was learning to accept reality as it is, or to experience reality without attempting to change or deny it. Participants also were instructed how to turn their minds toward and willingly practice acceptance. They learned how to approach and experience painful situations, feelings, and thoughts.

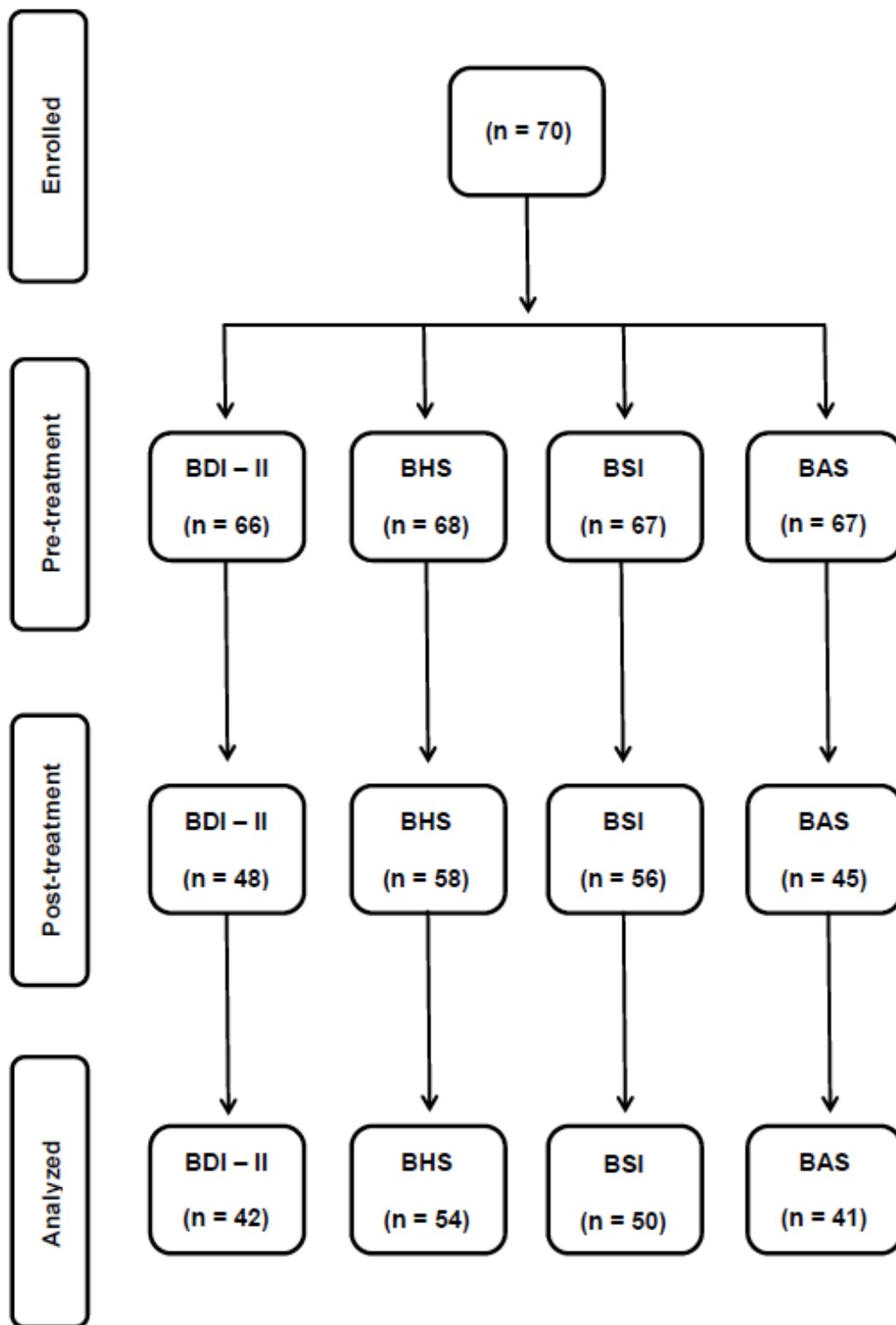
Data collection. Pre-treatment materials were mailed to participants prior to their first day in the program. They completed the packet of materials and returned them to the clinic during their first visit. The purpose of the research packet (that is, to evaluate the program) was explained in a welcome letter mailed to them prior to their committing to the program. During the initial workshop, participants were given an opportunity to ask questions. All participants gave oral consent to the research, and many participants even expressed appreciation that the facility was formally evaluating the program. Participants were given post-treatment materials during the second-to-last session and asked to return them at the last meeting.

Figure 2 displays the number of participants who completed each measure at pre-treatment and at post-treatment. This figure also shows how many participants provided data at both pre-treatment and post-treatment (to be used in subsequent analyses

examining the effects of the program). There were no demographic differences between the participants who provided complete data and those who did not. No significant differences were detected based on gender [$\chi^2(1) = 2.29, p = 0.130$], race [$\chi^2(1) = 0.02, p = 0.894$], relationship to family member with mental illness [$\chi^2(1) = 0.18, p = 0.668$], whether or not the family member with mental illness is currently enrolled in DBT [$\chi^2(1) = 0.18, p = 0.673$], year of program attendance [$\chi^2(5) = 2.01, p = 0.848$], education [$\chi^2(2) = 2.13, p = 0.345$], or age [$t(67) = 1.87, p = 0.67$]. Information about missing data was not available, and it is unclear whether missing data was due to participant characteristics (such as failure to return a packet or to complete a particular measure) or distribution errors (such as failure to supply a packet to every participant or to include each measure). Only one participant dropped out of the program entirely during the six years that the program has been offered.

Figure 2

Number of Participants Completing Measures at Pre-treatment and Post-treatment



Analyses

Descriptive analyses. The descriptive statistics will be presented for each measure at pre-treatment and post-treatment. These statistics will utilize any available data to provide the most comprehensive representation of program participants (specifically, rows two and three of Figure 2). Participants' scores on the BDI – II, BHS, and BSI will be compared to qualitative clinical descriptions to provide additional information regarding how participants are functioning. Finally, a series of analyses will be conducted to determine if the scores on any measures vary based on demographic variables. Three variables will be recoded prior to analyses. Race will be coded as Caucasian or non-Caucasian, relationship with family member will consist of either parent or other family member, and education will comprise three groups, including high school, college, or graduate education.

Statistical analyses. Changes in scores on the BDI – II, BHS, BSI, and BAS from pre-treatment to post-treatment will be analyzed using traditional null-hypothesis significance testing (NHST). For these analyses, only participants who have provided data at both pre-treatment and post-treatment will be included (those in row four of Figure 2). Any demographic variables that are found to influence scores on the measures will be included in the analyses.

Clinical significance analyses. The clinical significance of any statistical changes will be examined to determine individual-level changes. For clinically significant change to occur, participants must demonstrate both reliable change (change beyond what can be accounted for by measurement error) and movement from a dysfunctional range at pre-treatment to a functional range at post-treatment. For these analyses, only participants

who have provided pre-treatment and post-treatment data will be included (again, those in row four of Figure 2).

The methodology for examining clinically significant changes was adapted from Jacobson and Truax (1991). First, a reliable change index is calculated to determine if the amount of change from pre-treatment to post-treatment exceeds the changes that could be accounted for by measurement error. This provides a value that is equivalent to an alpha level of 0.05. The reliable change index is calculated using the following:

$$RC = \frac{X_2 - X_1}{S_{diff}}$$

In the above formula, the reliable change index (RC) is computed for each participant by subtracting the pre-treatment score (X_1) from the post-treatment score (X_2) and dividing by the standard error of difference between the two scores (S_{diff}).

$$s_{diff} = \sqrt{2(SE)^2}$$

The standard error of difference is calculated by inserting the standard error of measurement (SE) in the above formula.

$$SE = s_1 \sqrt{1-r_{xx}}$$

The standard error of measurement (SE) can be obtained using the standard deviation of the research sample at pre-treatment (S_1) and the test-retest reliability (r_{xx}) of the measure of interest.

Next, a formula is utilized to determine a cutoff score that separates functional and dysfunctional populations. The functional population represents individuals who have scores in a normal, healthy range, and the dysfunctional population signifies individuals who have scores that are in a range of clinical concern.

$$c = \frac{s_0M_1 + s_1M_0}{s_0 + s_1}$$

The cutoff score (c) is calculated using the mean and standard deviation from a normal, healthy sample (M_0 and S_0) and the mean and standard deviation from the research sample at pre-treatment (M_1 and S_1). This method is utilized when normative data for both clinical and non-clinical populations are available.

Finally, the above information is synthesized to classify individuals based on the clinical significance of their changes. Individuals who have scores that both demonstrate reliable change and cross the threshold from dysfunctional at pre-treatment to functional at post-treatment are classified as “recovered.” Those who show reliable change but do not cross the threshold between dysfunctional and functional are considered to be “improved.” Individuals who do not achieve reliable change are deemed “unchanged.” Individuals are classified as “deteriorated” when they demonstrate reliable change, but the direction of this change is associated with a worsening of clinical symptoms. Finally, some individuals cannot be classified by this model. The final group consisted of those who do not achieve reliable change and who have scores in the functional range at pre-treatment. Those who meet both of these criteria are considered “unclassified.”

Results

Pre-treatment Descriptive Statistics

In this section, descriptive statistics are presented for each pre-treatment measure. The scores obtained by participants on the BDI – II, BHS, and BSI are compared to clinical norms or cutoffs (clinical norms are not available for the BAS). Also, tests were conducted to determine if pre-treatment scores on each measure vary based on any demographic variables. A Bonferroni correction was not utilized to correct for multiple comparisons in order to maximize the chance of detecting demographic variables that may influence treatment scores.

BDI - II. Pre-treatment BDI – II scores ranged from 0-35, with a mean score of 8.98 (SD = 8.11). These scores were compared to clinical cutoff scores in order to determine how participants were functioning at pre-treatment. According to the BDI – II scoring manual, a score ranging from 0-13 indicates minimal depression, 14-19 denotes mild depression, 20-28 signifies moderate depression, and 29-63 designates severe depression (Beck, 1996). Nearly 73% (n = 48) of participants endorsed minimal depression, while 19.6% (n = 13) reported mild depression, 4.5% (n = 3) indicated moderate depression, and 3.1% (n = 2) demonstrated severe depression. These scores demonstrate substantial variability in participants' pre-treatment depression levels.

A gender difference was detected for pre-treatment BDI – II scores [$t(62.90) = -3.48, p = 0.001$]. Females (M = 11.46, SD = 8.83) reported significantly higher depression scores than males (M = 5.41, SD = 5.29). There were no differences in pre-treatment BDI – II scores based on race [$t(62) = 0.80, p = 0.428$], relationship to family member with mental illness [$t(53) = 1.06, p = 0.294$], whether or not the family member

with mental illness is currently enrolled in DBT [$t(61) = -0.42, p = 0.678$], year of program attendance [$F(5, 60) = 0.54, p = 0.748$], education [$F(2, 60) = 0.74, p = 0.482$], or age [$R = 0.07, F(1, 63) = 0.34, p = 0.560$].

BHS. Pre-treatment BHS scores ranged from 0-19, with a mean score of 4.19 (SD = 4.26). Hopelessness scores obtained on the BHS were also compared to suggested clinical cutoff scores. According to the guidelines suggested in the BHS scoring manual, a score between 0-3 suggests minimal hopelessness, 4-8 indicates mild hopelessness, 9-14 represents moderate hopelessness, and a score above 14 denotes severe hopelessness (Beck & Steer, 1988). Variability was found in participants' pre-treatment hopelessness scores, as 63.2% ($n = 43$) of participants fell into the minimal hopelessness range, 23.6% ($n = 17$) fell into the mild hopelessness range, 10.3% ($n = 7$) were in the moderate hopelessness range, and 3.0% ($n = 2$) were in the severe hopelessness range.

No significant differences in pre-treatment BHS scores were found based on gender [$t(65.34) = -1.66, p = 0.101$], race [$t(63) = -0.68, p = 0.497$], relationship to family member with mental illness [$t(55) = 0.22, p = 0.828$], whether or not the family member with mental illness is currently enrolled in DBT [$t(63) = 0.43, p = 0.671$], year of program attendance [$F(5, 62) = 0.86, p = 0.516$], education [$F(2, 62) = 3.09, p = 0.052$], or age [$R = 0.10, F(1, 65) = 0.69, p = 0.410$].

BSI. Pre-treatment BSI global severity index scores ranged from 0-2.17, with a mean score of 0.47 (SD = 0.43). The BSI definition of caseness was utilized to compare participants' BSI scores to clinical cutoffs. Caseness is defined as "the value or score on the screening measure that will serve in a selection model to define a positive case" (Derogatis, 1993, p. 31). On the BSI, a T-score (or the raw score that corresponds to this

T score) of 63 or higher is required to meet this definition and classify a participant within a range of clinical concern. Different norms are provided by gender, so separate comparisons were made for male and female participants. For males, 22.2% ($n = 6$) obtained scores higher than the clinical cutoff on the global severity index, 11.1% ($n = 3$) exceeded the threshold on the interpersonal sensitivity subscale, and 14.8% ($n = 4$) were above the cutoff on the hostility subscale. Regarding females, the amounts of participants scoring higher than the clinical cutoffs were: 20% ($n = 8$) on the global severity index, 35% ($n = 14$) on the interpersonal sensitivity subscale, and 17.5% ($n = 7$) on the hostility subscale.

Significant gender differences were found regarding pre-treatment BSI global severity index raw scores [$t(65) = -2.50, p = 0.015$], with females ($M = 0.57, SD = 0.47$) endorsing greater symptomology than males ($M = 0.32, SD = 0.31$). Females ($M = 0.74, SD = 0.67$) also obtained higher scores than males ($M = 0.32, SD = 0.53$) on the interpersonal sensitivity subscale, [$t(65) = -2.68, p = 0.009$]. There were no significant gender differences detected on the hostility subscale, [$t(65) = -1.34, p = 0.185$].

There were no other differences in BSI global severity index scores based on any other demographic variables, including race [$t(62) = 1.21, p = 0.229$], relationship to family member with mental illness [$t(55) = 0.36, p = 0.720$], whether or not the family member with mental illness is currently enrolled in DBT [$t(62) = -0.86, p = 0.394$], year of program attendance [$F(5, 61) = 0.67, p = 0.650$], education [$F(2, 61) = 2.96, p = 0.059$], or age [$R = 0.12, F(1, 64) = 0.91, p = 0.344$].

BAS. Pre-treatment BAS total scores ranged from 19-74 with a mean score of 44.21 (SD = 13.49). Normative or clinical data are not available for the BAS, so comparisons of this nature could not be made.

Significant gender differences were found in pre-treatment BAS total scores [$t(65) = -2.78, p = 0.007$], with females (M = 47.80, SD = 13.49) endorsing greater burden than males (M = 38.89, SD = 11.82). Given this overall difference, the subscales of the BAS were examined to determine the extent of the gender differences. As displayed in Table 2, female participants obtained higher burden scores on the following subscales: disrupted activities, personal distress, time perspective, and guilt. There were no significant differences detected on the basic social functioning subscale.

Pre-treatment BAS total scores did not vary based on any other demographic variables, such as race [$t(62) = 0.43, p = 0.673$], relationship to family member with mental illness [$t(55) = 0.16, p = 0.873$], whether or not the family member with mental illness is currently enrolled in DBT [$t(62) = -0.03, p = 0.976$], year of program attendance [$F(5, 61) = 0.48, p = 0.788$], education [$F(2, 61) = 1.40, p = 0.255$], or age [$R = 0.09, F(1, 64) = 0.47, p = 0.497$].

Table 2

Gender Differences in Pre-treatment BAS Subscale Scores

Subscale	<u>Female</u>	<u>Male</u>	df	<i>t</i>
	M(SD)	M(SD)		
Disrupted Activities	15.73(5.26)	12.41(4.49)	65	-2.68**
Personal Distress	8.95(3.16)	7.22(2.93)	65	-2.26*
Time Perspective	8.53(2.40)	7.07(2.50)	65	-2.39*
Guilt	7.78(2.74)	6.33(2.81)	65	-2.09*
Basic Social Functioning	4.63(1.92)	3.96(1.29)	65	-1.69

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Post-treatment Descriptive Statistics

The same analyses and comparisons detailed for the pre-treatment measures were conducted to describe the nature of participants' scores at post-treatment.

BDI – II. Post-treatment BDI – II scores ranged from 0-26, with a mean score of 6.46 (SD = 6.3). BDI – II scores at post-treatment demonstrated that 87.5% (n = 42) of participants fell into the minimal depression range, 6.3% (n = 3) were in the mild depression range, 6.3% (n = 3) were in the moderate depression range, and 0% (n = 0) remained in the severe depression range.

There were no differences in post-treatment BDI – II scores based on any demographic variables, including gender [$t(44) = -0.86, p = 0.393$], race [$t(42) = 1.57, p = 0.124$], relationship to family member with mental illness [$t(38) = -0.18, p = 0.857$], whether or not the family member with mental illness is currently enrolled in DBT [$t(43) = 0.22, p = 0.828$], year of program attendance [$F(5, 42) = 1.44, p = 0.229$], education [$F(2, 42) = 1.02, p = 0.369$], or age [$R = 0.08, F(1, 44) = 0.30, p = 0.586$].

BHS. Post-treatment BHS scores ranged from 0-18, with a mean score of 2.86 (SD = 3.10). These scores indicated that 72.4% (n = 42) of participants reported minimal hopelessness, 22.4% (n = 13) demonstrated mild hopelessness, 3.4% (n = 2) endorsed moderate hopelessness, and 1.7% (n = 1) indicated severe hopelessness.

Post-treatment BHS scores varied based on gender, [$t(47.18) = -2.27, p = 0.028$]. Females (M = 3.53, SD = 3.71) had significantly higher post-treatment BHS scores than males (M = 1.91, SD = 1.51). There were no differences in post-treatment BHS scores based on race [$t(51) = -0.95, p = 0.345$], relationship to family member with mental illness [$t(44) = -0.36, p = 0.719$], whether or not the family member with mental illness is currently enrolled in DBT [$t(51) = -0.15, p = 0.882$], year of program attendance [$F(5,$

52) = 0.50, $p = 0.774$], education [$F(2, 49) = 0.57, p = 0.572$], or age [$R = 0.23, F(1, 53) = 2.87, p = 0.096$].

BSI. Post-treatment BSI global severity index scores ranged from 0-1.64, with a mean score of 0.40 (SD = 0.38). At post-treatment, the amount of males with scores above the clinical cutoff included 9.5% ($n = 2$) on the global severity index, 4.8% ($n = 1$) on the interpersonal sensitivity subscale, and 4.8% ($n = 1$) on the hostility subscale. Females scoring above the clinical cutoff included 18.2% ($n = 6$) on the global severity index, 9.3% ($n = 3$) on the interpersonal sensitivity subscale, and 18.2% ($n = 6$) on the hostility subscale.

Significant gender differences were detected in post-treatment BSI global severity index scores, with females obtaining higher scores than males, [$t(52) = -2.16, p = 0.035$]. There were no gender differences at post-treatment for the interpersonal sensitivity subscale [$t(51) = -1.97, p = 0.054$] or hostility subscale [$t(52) = -1.42, p = 0.163$].

There were no differences in post-treatment BSI global severity index scores related to race [$t(49) = 0.48, p = 0.637$], relationship to family member with mental illness [$t(41) = 0.82, p = 0.419$], whether or not the family member with mental illness is currently enrolled in DBT [$t(49) = 0.49, p = 0.630$], year of program attendance [$F(5, 50) = 1.08, p = 0.386$], education [$F(2, 47) = 0.48, p = 0.621$], or age [$R = 0.12, F(1, 51) = 0.68, p = 0.412$].

BAS. Post-treatment BAS total scores ranged from 20-64, with a mean score of 42.34 (SD = 12.52). There were no demographic variables that related to differences in post-treatment BAS total scores. No differences were found based on gender [$t(41) = -0.92, p = 0.362$], race [$t(38) = 0.18, p = 0.857$], relationship to family member with

mental illness [$t(31) = 1.04, p = 0.306$], whether or not the family member with mental illness is currently enrolled in DBT [$t(39) = 1.87, p = 0.069$], year of program attendance [$F(3, 41) = 1.85, p = 0.153$], education [$F(2, 36) = 0.58, p = 0.563$], or age [$R = 0.02, F(1, 40) = 0.02, p = 0.882$].

Summary

The descriptive results above demonstrate that there is a large amount of variability in pre-treatment scores, with some participants scoring in ranges of clinical concern. Females appear to be entering the program with greater levels of distress than males. They are endorsing significantly higher depression scores on the BDI – II, greater symptomology on the global severity index and interpersonal sensitivity subscales of the BSI, and larger amounts of burden on the BAS, including total scores, disrupted activities, personal distress, time perspective, and guilt.

The mean scores and symptom ranges observed at post-treatment show that participants are generally endorsing less symptomology after completion of the program. Variability in scores still exists at post-treatment, and some notable gender differences remain. At post-treatment, females endorse significantly higher hopelessness scores on the BHS. Additionally, the global severity index of the BSI is higher at post-treatment for females than males. The following sections examine the statistical and clinical significance of the changes observed over the course of the program.

Statistical Changes from Pre-treatment to Post-treatment

Given the gender differences detected in the aforementioned descriptive analyses, changes from pre-treatment to post-treatment were calculated using mixed between-within-subjects ANOVAs. For each measure, the main effects of time (changes in scores

from pre-treatment to post-treatment), the main effects of gender (male scores compared to female scores), and the interaction effects are presented. Table 3 displays the descriptive statistics (M and SD) for males and females that were utilized in all statistical change analyses.

Table 3

Gender Differences in Mean Scores from Pre-treatment to Post-treatment

	<u>Male</u>		<u>Female</u>	
	Pre M(SD)	Post M(SD)	Pre M(SD)	Post M(SD)
BDI – II	6.87 (6.10)	5.33 (4.81)	11.30 (8.46)	7.37 (7.27)
BHS	3.25 (3.09)	1.95 (1.50)	4.88 (4.69)	3.53 (3.71)
BSI				
Global Severity Index	0.27 (0.26)	0.30 (0.29)	0.56 (0.41)	0.49 (0.41)
Interpersonal Sensitivity	0.22 (0.30)	0.20 (0.26)	0.68 (0.54)	0.39 (0.42)
Hostility	0.34 (0.39)	0.27 (0.36)	0.48 (0.47)	0.44 (0.49)
BAS				
Total Score	38.93(13.52)	39.77(13.67)	48.77(12.50)	44.04(12.23)
Disrupted Activities	12.07 (5.06)	12.87 (5.77)	15.62 (4.74)	14.04 (5.36)
Personal Distress	7.27 (3.15)	7.40 (2.92)	9.00 (3.02)	8.15 (3.21)
Time Perspective	7.00 (2.78)	7.40 (2.50)	8.81 (2.40)	8.15 (2.22)
Guilt	6.67 (3.04)	6.27 (2.63)	8.27 (2.92)	7.00 (2.28)
Basic Social Functioning	3.93 (1.10)	3.83 (1.13)	4.69 (1.81)	4.15 (1.54)

BDI – II. Table 4 displays the statistical changes in BDI – II scores from pre-treatment to post-treatment. A significant main effect for time was detected, as BDI – II scores significantly decreased from pre-treatment to post-treatment. As depicted in Figure 2, BDI – II scores decline over time for both males and females, though females have higher scores at both time points. The effect size of this change indicates a moderate (almost large) effect, as compared to the guidelines suggested by Cohen (1988). There was no main effect detected for gender, and the interaction of time and gender was not significant.

Table 4

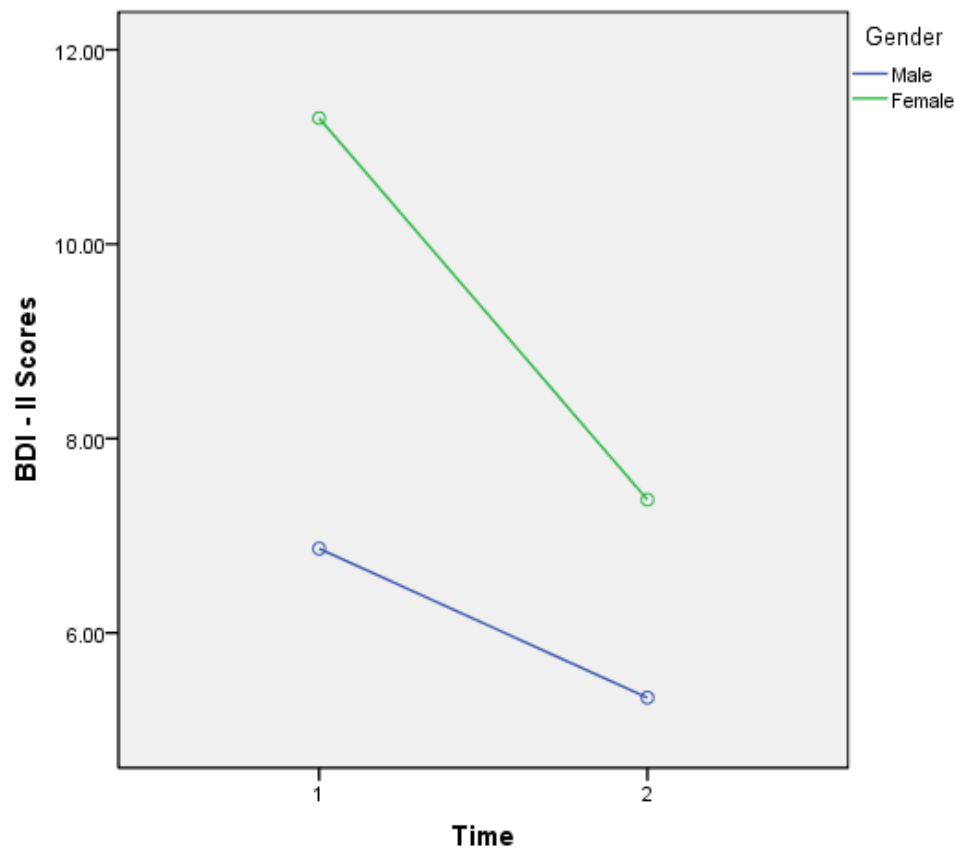
Changes in BDI – II Scores from Pre-treatment to Post-treatment

	Wilks' Lambda	df	<i>F</i>	partial η^2
Time	0.87	(1, 40)	6.04*	0.13
Gender	----	(1, 40)	2.58	0.06
Time x Gender	0.97	(1, 40)	1.16	0.03

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Figure 3

Male and Female BDI – II Scores from Pre-treatment to Post-treatment



Note. The top line depicted in the graph represents females, and the bottom line denotes males.

BHS. Regarding BHS scores, a significant main effect for time was found, as both male and female scores decreased from pre-treatment to post-treatment. As noted in Table 5, a large effect size was detected for this result. In these analyses, there were no main effects detected for gender, and the interaction of time and gender was not significant. Figure 3 shows that the slope of change for males and females is practically identical. This figure also demonstrates higher scores for females at both time points.

Table 5

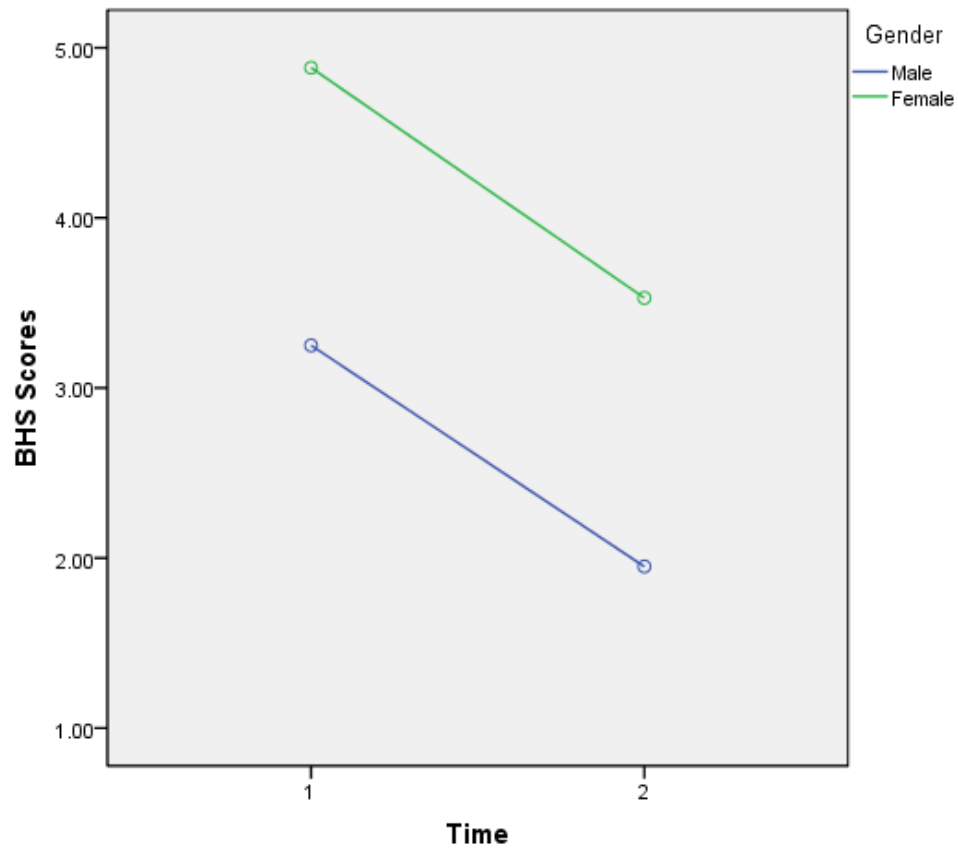
Changes in BHS Scores from Pre-treatment to Post-treatment

	Wilks' Lambda	df	F	partial η^2
Time	0.85	(1, 52)	9.00**	0.15
Gender	----	(1, 52)	2.94	0.05
Time x Gender	1.00	(1, 52)	0.01	0.00

Note. *p < .05, **p < .01, ***p < .001

Figure 4

Male and Female BHS Scores from Pre-treatment to Post-treatment



Note. The top line depicted in the graph represents females, and the bottom line denotes males.

BSI. Table 6 summarizes changes in BSI scores from pre-treatment to post-treatment. For the BSI analyses, alpha was set at 0.025 to account for multiple comparisons using the same data. For example, there is overlap between the individual items that comprise the global severity index and the two subscales. Because of this overlap a more stringent alpha level is preferred. Regarding the global severity index, no main effects were detected for time or gender, and the interaction was not significant. There were also no significant changes on the hostility subscale.

BSI interpersonal sensitivity scores significantly changed from pre-treatment to post-treatment. Main effects for time were observed, as scores significantly decreased. A large effect size was found for this change. Main effects were also found for gender, with females scoring higher than males on interpersonal sensitivity at both time points. Furthermore, the interaction of time and gender was significant. Females reported greater changes than males from pre-treatment to post-treatment. Please see Figure 3 for a graphical illustration of this interaction.

Table 6

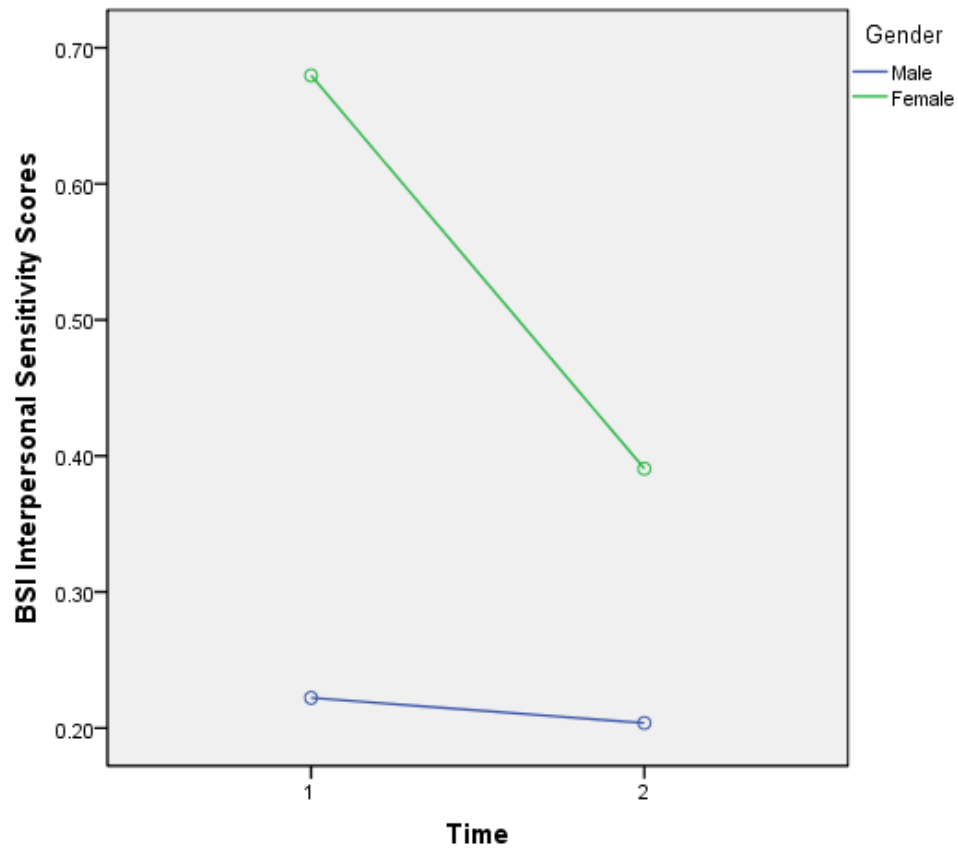
Changes in BSI Scores from Pre-treatment to Post-treatment

	Wilks' Lambda	df	F	partial η^2
Global Severity Index				
Time	0.99	(1, 49)	0.38	0.01
Gender	----	(1, 49)	5.26	0.10
Time x Gender	0.96	(1, 49)	2.20	0.04
Interpersonal Sensitivity				
Time	0.80	(1, 48)	11.98**	0.20
Gender	----	(1, 48)	7.71**	0.14
Time x Gender	0.84	(1, 48)	9.27**	0.16
Hostility				
Time	0.97	(1, 49)	1.32	0.03
Gender	----	(1, 49)	1.51	0.03
Time x Gender	1.00	(1, 49)	0.09	0.00

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Figure 5

Male and Female BSI Interpersonal Sensitivity Scores from Pre-treatment to Post-treatment



Note. The top line depicted in the graph represents females, and the bottom line denotes males.

BAS. Similar to the BSI analyses, the alpha level for BAS analyses was set at 0.025 to account for multiple comparisons from the same data. There were no significant main effects or interaction effects detected for BAS total scores or any of the subscales. Table 7 displays these results. Generally, the effect sizes found in the BAS analyses are relatively small. One exception is the main effect for time on the guilt subscale. The effect size indicates that a moderate effect does exist; however, there may not have been sufficient power to reach statistical significance.

Table 7

Changes in BAS Scores from Pre-treatment to Post-treatment

	Wilks' Lambda	df	F	partial η^2
Total Score				
Time	0.97	(1, 39)	1.16	0.03
Gender	----	(1, 39)	3.55	0.08
Time x Gender	0.94	(1, 39)	2.37	0.06
Disrupted Activities				
Time	0.99	(1, 39)	0.27	0.01
Gender	----	(1, 39)	2.44	0.06
Time x Gender	0.94	(1, 39)	2.54	0.06
Personal Distress				
Time	0.98	(1, 39)	0.67	0.02
Gender	----	(1, 39)	1.90	0.05
Time x Gender	0.97	(1, 39)	1.27	0.03
Time Perspective				
Time	1.00	(1, 39)	0.11	0.00
Gender	----	(1, 39)	3.42	0.08
Time x Gender	0.95	(1, 39)	1.93	0.05
Guilt				
Time	0.90	(1, 39)	4.19	0.10
Gender	----	(1, 39)	2.27	0.06
Time x Gender	0.97	(1, 39)	1.14	0.03
Basic Social Functioning				
Time	0.96	(1, 39)	1.69	0.04
Gender	----	(1, 39)	1.65	0.04
Time x Gender	0.98	(1, 39)	0.80	0.02

Note. *p < .05, **p < .01, ***p < .001

Summary

Significant decreases from pre-treatment to post-treatment were found for both male and female scores on the BDI – II, BHS, and BSI interpersonal sensitivity subscale. Gender differences were detected on the BSI interpersonal sensitivity subscale, with females scoring significantly higher than males at both time points. Additionally, the interaction of time and gender was significant, with females demonstrating more substantial interpersonal sensitivity decreases than males. There were no significant changes detected on any of the BAS subscales.

Clinical Significance

The clinical significance of the aforementioned statistical changes was analyzed to determine individual level changes from pre-treatment to post-treatment. Reliable change index scores and cutoff scores separating functional and dysfunctional populations were computed for the BDI – II, BHS, and BSI interpersonal sensitivity subscale (hereafter referred to as BSI – IS). Many participants were not classifiable by this method, as their pre-treatment scores were already within the functional range. Table 8 displays the number and percentage of participants who did achieve clinically significant changes, and the changes on each measure are discussed in turn.

Table 8

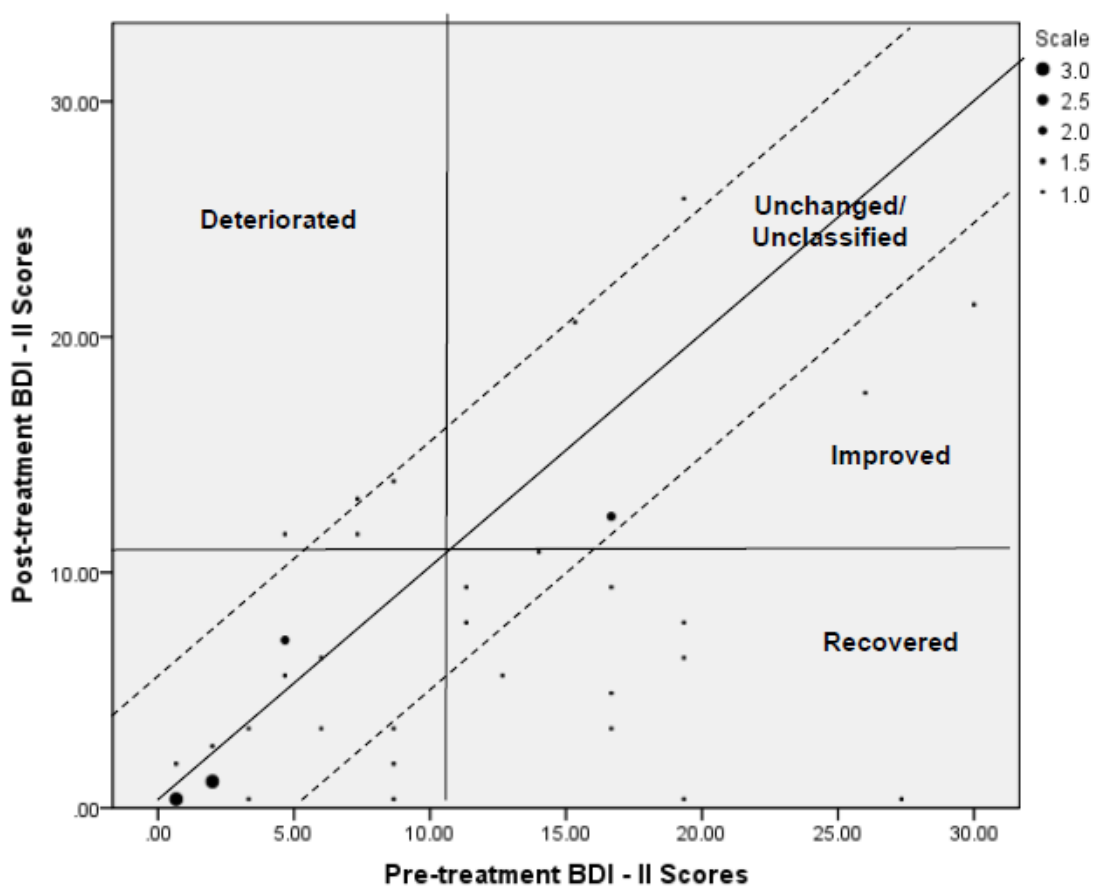
Clinical Significance of Changes on the BDI – II, BHS, and BSI - IS

	<u>BDI – II</u>		<u>BHS</u>		<u>BSI - IS</u>	
	n	%	n	%	n	%
Reliable Change Index						
Positive Change	12	28.6	2	3.7	6	12.0
Non-significant Change	27	64.3	52	96.3	43	86.0
Negative Change	3	7.1	0	0.0	1	2.0
Return to Normal Functioning						
Yes	10	23.8	6	11.1	12	24.0
No	7	16.7	12	22.2	15	30.0
Unclassified	25	59.5	36	66.7	23	46.0
Clinical Significance						
Recovered	8	19.0	2	3.7	4	8.0
Improved	2	4.8	0	0.0	2	4.0
Unchanged	6	14.3	16	29.6	21	42.0
Deteriorated	3	7.1	0	0.0	1	2.0
Unclassified	23	54.8	36	66.7	22	44.0

BDI – II. The reliable change index cutoff score for the BDI – II was calculated to be 5.70. Participants who changed more than 5.70 points on the BDI – II from pre-treatment to post-treatment were considered to achieve reliable change (that is, change beyond what may be accounted for by measurement error). The majority of participants did not demonstrate a significant amount of change; however, approximately 28% of participants did attain positive change. Positive change is defined as an improvement in clinical symptoms (which actually corresponds to lower scores on the BDI – II).

Almost 25% of the sample demonstrated a return to normal functioning. These participants obtained scores within the dysfunctional range at pre-treatment, but had scores within the functional range at post-treatment. Regarding clinical significance classifications, nearly 20% of the sample recovered, meaning that they both demonstrated reliable change and moved from the dysfunctional range to the functional range. An additional 5% of participants improved, by achieving reliable changes in the desired direction (though they did not cross into the functional range). Approximately 7% of participants actually deteriorated over the course of treatment. These participants demonstrated reliable change, but in a direction that is associated with worsening of symptoms. Figure 6 graphically depicts the clinically significant changes on the BDI – II.

Figure 6

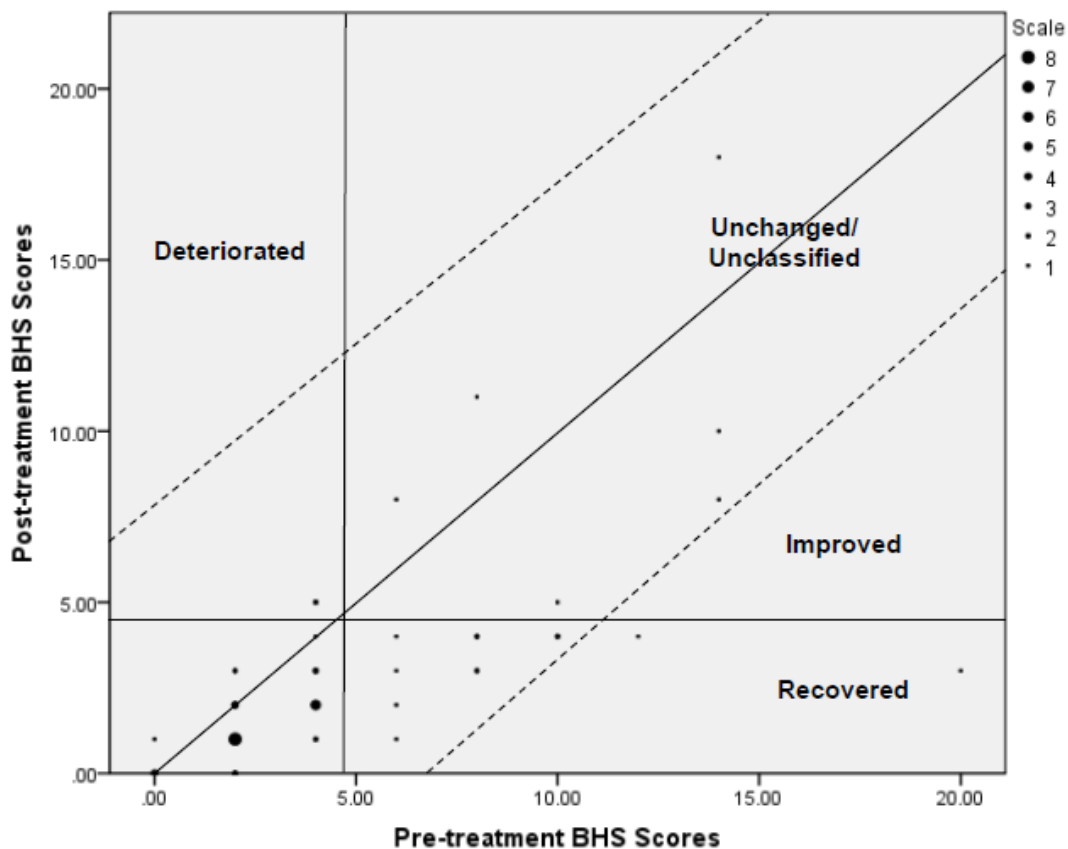
Clinically Significant Changes in BDI- II Scores

Note. The solid vertical and horizontal lines denote the cutoff point between the functional and dysfunctional ranges. Scores to the left of the vertical line and below the horizontal line are considered to be within the functional range at pre-treatment and post-treatment, respectively. The solid diagonal line represents no change, and the dashed diagonal lines represent the reliable change index cutoffs. The scale indicates the number of participants at each point.

BHS. For the BHS, the reliable change index cutoff score was 6.55. The test-retest reliability of the BHS is relatively low (as compared to the other two measures), which inflates the potential for measurement error and necessitates a larger cutoff score to determine whether or not change is reliable. With this reliable change index score, only 4% of the sample achieved reliable change (all in the positive direction) on the BHS.

Some participants did move from the dysfunctional to the functional range; however, the majority of participants were unclassifiable due to having scores within the functional range at pre-treatment and very little change occurring. Generally, BHS scores were rather low at pre-treatment, which did not allow for much change. Two participants (4%) were classified as recovered, and the magnitude of their changes is noteworthy. One of these participants obtained a BHS score of 19 at pre-treatment (which would be qualitatively described as “severe hopelessness”) and reported a score of 0 at post-treatment. The other individual who was classified as recovered indicated a score of 12 at pre-treatment (corresponding to “moderate hopelessness”) and a score of 4 at post-treatment. No participants were considered to have deteriorated. Figure 7 illustrates the clinically significant changes on the BHS.

Figure 7

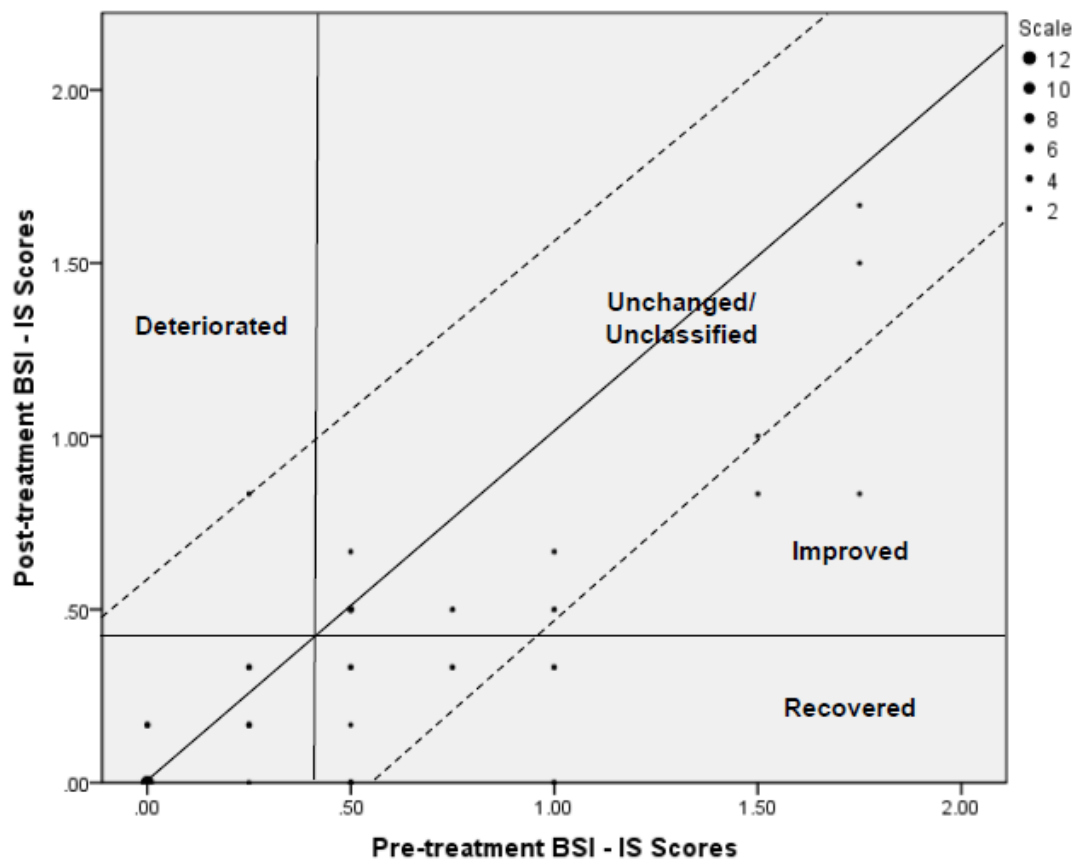
Clinically Significant Changes in BHS Scores

Note. The solid vertical and horizontal lines denote the cutoff point between the functional and dysfunctional ranges. Scores to the left of the vertical line and below the horizontal line are considered to be within the functional range at pre-treatment and post-treatment, respectively. The solid diagonal line represents no change, and the dashed diagonal lines represent the reliable change index cutoffs. The scale indicates the number of participants at each point.

BSI – IS. The reliable change index for the BSI – IS was calculated to be 0.55. As with the other two measures, the majority of participants did not change significantly. Twelve percent achieved reliable change in the positive direction. Two percent (which corresponds to only 1 participant) reported negative change from pre-treatment to post-treatment.

Regarding return to normal functioning, 24% of participants did move from the dysfunctional range at pre-treatment to the functional range at post-treatment. Eight percent of the sample classified as recovered, with another 4% classified as improved. Another six participants (12%) were very close to being classified as recovered or improved. They all demonstrated substantial improvements, but their reliable change scores were just below the required cutoff. Finally, one participant did deteriorate from pre-treatment to post-treatment. Figure 8 displays a graph of clinically significant changes on the BSI – IS.

Figure 8

Clinically Significant Changes in BSI – IS Scores

Note. The solid vertical and horizontal lines denote the cutoff point between the functional and dysfunctional ranges. Scores to the left of the vertical line and below the horizontal line are considered to be within the functional range at pre-treatment and post-treatment, respectively. The solid diagonal line represents no change, and the dashed diagonal lines represent the reliable change index cutoffs. The scale indicates the number of participants at each point.

Discussion

There are many challenges associated with having a relative with mental illness. Family members have unique struggles that they must learn to cope with, and they also have unique opportunities to help their relatives by becoming more skillful themselves. The present study examined the effectiveness of Family Skills, a DBT program for family members of persons with mental illness. The Family Skills program combined aspects of family psychoeducation and family education programs, as it was led by a mental health professional, but the group of participants only consisted of family members. The present study utilized naturalistic data collected at pre-treatment and post-treatment at a private practice mental health center.

Pre-treatment data demonstrated that there is a great degree of variability in the functioning of participants when they enter the program. Pre-treatment depression and hopelessness scores varied from the mild or minimal range to the severe range, and there were several participants who scored within ranges of clinical concern on measures of general symptomology, interpersonal sensitivity, and hostility. The very limited amount of previous research that has examined the functioning of family members of persons with mental illness has found that family members' mean scores on several measures of symptomology are higher than those found in the general population (Scheirs & Bok, 2007).

The results from the present study suggest that some family members are reporting symptoms of clinical concern, whereas others are presenting with little to no symptomology (on the measures utilized in this study). These differences may, in part, reflect participants' intentions when entering the program. The two primary purposes of

Family Skills are to (1) help family members cope with the stress associated with having a relative with mental illness, and (2) teach family members strategies to interact with their relatives in a more effective manner. Perhaps the individuals who enter the program with higher symptomology are more interested in seeking strategies to help themselves cope, whereas those with little to no symptomology are more focused on helping their relative. No firm conclusions can be drawn from the data that were available for the present study, but future research may address this difference in functioning.

Gender differences were found in pre-treatment functioning, with females endorsing significantly higher depression, general symptomology, interpersonal sensitivity, and burden (including total scores as well as the subscales of disrupted activities, personal distress, time perspective, and guilt). These findings are partially consistent with previous work. Hoffman et al. (2007) found that female participants reported higher grief and subjective burden than males prior to treatment. They found no differences in depression, mastery, or objective burden. The differences between the results of the present study and Hoffman et al. (2007) may reflect different measures that were utilized to capture symptoms or differences between the samples.

It is not clear why females are reporting more distress and symptomology than males in several different domains. Perhaps these female participants experience more stress and strain associated with caring for their relative (Giffin, 2008). Alternatively, male participants may be less likely to experience (or endorse) the particular symptoms measured in these studies. Given that both studies have found female participants presenting with greater symptomology than male participants, future research is needed to determine what may account for this discrepancy.

Program Effectiveness

Significant decreases from pre-treatment to post-treatment were found on measures of depression, hopelessness, and interpersonal sensitivity. These results provide initial support for the effectiveness of the Family Skills program. Of course, these results must be interpreted with caution. The lack of experimental design and a control group prevent drawing any definitive conclusions.

Clinically significant changes also were observed on measures of depression, hopelessness, and interpersonal sensitivity. In the present study, almost 25% of participants recovered from or improved their symptoms of depression. Additionally, 4% of participants demonstrated clinically significant changes in hopelessness symptoms, and 12% recovered or improved with regard to interpersonal sensitivity. These clinically significant changes certainly provide additional support for the utility of Family Skills; however, they may actually be an underestimation of the full benefits of the program.

Many participants who entered the program did not have symptoms that were elevated enough at pre-treatment to be of clinical concern (they were functional at intake). Thus, these participants could not have possibly reduced their symptoms enough to demonstrate clinically significant changes. Some researchers have argued that including participants who are functional at intake can distort the actual effects of a particular treatment or program (Bowersox, 2009).

When the participants who were functional at intake are removed from the sample, the summary of clinically significant changes is more positive. Of the individuals who could have possibly achieved clinically significant change, 52.6% recovered or improved with regard to depression, 11.1% demonstrated recovery from hopelessness,

and 21.4% recovered from or improved interpersonal sensitivity. These results provide stronger evidence for the individual-level impact of the Family Skills program. Future research may benefit from examining clinically significant changes using less stringent criteria to help capture the changes that are occurring in all family members (including those who are functional at intake and those who are not). This may involve using different norms for comparison or determining alternative cutoff points.

Given the paucity of research that has examined the functioning of family members, the present study provides important descriptive data about all participants, how they are functioning prior to the program, and how they change from pre-treatment to post-treatment. There may be important effects of the program that were not captured in the present study. All of the instruments that were utilized measured aspects of dysfunction, so the present study assessed decreases in dysfunction from pre-treatment to post-treatment. It is quite likely that positive changes also occur as a result of the Family Skills program. Anecdotally, many participants have reported increases in domains such as knowledge, sense of mastery and competence, compassion, and social support. Although many participants did not have sufficient dysfunction at intake to demonstrate significant reductions in symptomology, these participants may have experienced more positive, growth-oriented changes that were not captured in the present study. The potential for positive changes and growth opportunities that are provided by the program remain undocumented.

Program Components Related to Effectiveness

As described earlier, the Family Skills program is an adaptation of DBT, designed to educate and treat family members of persons with mental illness. The changes

observed from pre-treatment to post-treatment may be best understood in the context of the components of the original treatment as well as the research that specifically focuses on family members.

Depression. Depression scores decreased from pre-treatment to post-treatment, and clinically significant changes were achieved by many participants. The emotion regulation module taught Family Skills participants how to label and describe their emotions, reduce their experience of (or vulnerability to) negative emotions, increase positive emotions, and let go of emotional suffering. This module directly targets depressed mood, negative thinking, mood-related behaviors, and other aspects that are associated with the experience of depression (Linehan, 1993b). The Family Skills participants are likely to have benefitted from learning and applying emotion regulation skills, and the use of these skills may account for changes observed in depression.

Hopelessness. Hopelessness decreased from pre-treatment to post-treatment, and substantial changes were noted in some participants. The individuals who reported drastic decreases in hopelessness may have benefitted from the psychoeducation component of the Family Skills program. As described earlier, accessing current and accurate information about mental illness and treatment can be difficult for family members (Buteau et al., 2008; Hoffman et al., 2003). Inaccurate or obsolete information can distort the course and treatability of mental illness, and can result in family members feeling helpless and hopeless (Lefley, 2005; Porr, 2010). The Family Skills program provided participants with a comprehensive overview of the development, maintenance, and treatment of emotion dysregulation disorders. The information provided was accurate, current, and derived from empirical research. The challenges and stress of having a

relative with mental illness were certainly not trivialized, but an important message of hope was conveyed to participants.

Additionally, the family members in each cohort had ill relatives at various stages of treatment. For example, some family members may have a relative who has never participated in DBT, while others may have a relative who has completed many months or even years of effective treatment. This provided an opportunity for validation and encouragement within the Family Skills groups. Family members were able to relate to one another's struggles, while also noting the improvements that their relatives have made. This unique type of understanding and support is a key feature of group programs, thus, the impact cannot be underestimated (Fruzzetti & Boulanger, 2005; Hoffman et al., 1999).

In addition to the process of the group, the content of two particular modules may have helped to decrease hopelessness. The radical acceptance module is quite powerful for family members. They learn how to experience reality (even when it is incredibly painful) without attempting to change or deny it. Paradoxically, the acceptance of pain actually leads to freedom from it (Brach, 2003). Additionally, the core mindfulness module instructs participants to balance their states of mind, strive to be non-judgmental, and focus on the present moment (Linehan, 1993b). These sets of skills may combine to help participants let go of the types of fears and negative thoughts about the future that are associated with hopelessness.

Interpersonal sensitivity. Interpersonal sensitivity decreased for both males and females, though females demonstrated greater changes than males from pre-treatment to post-treatment. Females entered the program with higher interpersonal sensitivity scores

than males, so they had more of an opportunity to demonstrate benefits from the program (that is, more room for their scores to decrease). Additionally, clinically significant changes in interpersonal sensitivity were achieved by several participants. Interpersonal sensitivity was directly targeted in the Family Skills program via the interpersonal effectiveness module. Skills in this module focused on how to prioritize objectives, maintain relationships, and preserve self-respect. Participants were also specifically taught how to recognize and manage factors that reduce interpersonal effectiveness. One explanation of the decrease in interpersonal sensitivity is the increase in interpersonal effectiveness.

The decrease in interpersonal sensitivity also may be conceptualized using the transactional model of dysregulation and invalidating responses (Fruzzetti et al., 2005; Figure 1). The Family Skills program focused extensively on validation, and the importance of using this skill when family members are interacting with their relative with mental illness. Adding validation into interpersonal exchanges works to decrease emotional arousal, promote accurate expression, and reduce the effects of previous invalidation (Fruzzetti, 2006). When family members validate their relative with mental illness (or anyone else in their life), they are more likely to receive responses that are reciprocally validating, emotionally-regulated, and clear (Fruzzetti et al., 2005). This healthier, more effective style of communication may serve to decrease interpersonal sensitivity. Within the DBT community, validation is humorously referred to as “the Ativan for interpersonal relationships,” and this quip may be demonstrated in Family Skills participants. It may be that a combination of interpersonal effectiveness skills, with

a special focus on validation, led to the demonstrated decreases in interpersonal sensitivity.

Burden. There were no significant changes in burden scores detected in the present study. This is in contrast to one of the goals of the program, as well as previous studies of family programs which have documented decreases in burden (Hoffman et al., 2007; Hoffman et al., 2005). Though no significant differences were detected overall, an examination of the means yields some surprising findings. For female participants, total burden scores and scores on each of the subscales decreased from pre-treatment to post-treatment. The limited sample size and available power in the present study may have impacted the effects that could be detected. Additionally, it is possible that substantial decreases in burden occur over time, as participants continue to learn how to apply the material from the Family Skills program (Hoffman et al., 2005). Certain aspects of burden, such as disrupted routines, financial strain, and emotional fatigue, likely cannot be fully remedied within a few months (Penney, 2008). Follow-up studies would help to determine if and how the various aspects of burden change over time.

For male participants, total burden mean scores, as well as mean scores on the disrupted activities, personal distress, and time perspective subscales actually increased slightly from pre-treatment to post-treatment. An individual-level examination of burden total scores for males reveals that 40% indicated that burden decreased from pre-treatment to post-treatment, while 53.3% reported that it increased, and 6.7% endorsed no change. It is possible that increases in male participants' burden are related to the decreases in female participants' burden. Many of the Family Skills participants are the parents of an adult child with mental illness, and many participants attend the program

with their spouse. At pre-treatment, female participants reported significantly higher total burden scores than males. There were no gender differences detected in total burden scores at post-treatment. Perhaps the burden of certain female participants is being shifted to their spouses, as male participants are taking more responsibility for or investing more effort into their family. It is not clear what may account for these findings, and future research is certainly needed to provide clarity.

Limitations

One of the most valuable aspects of the present study is that the data were collected in a naturalistic mental health setting. Of course, there are also limitations associated with this approach. There was no control group to which the treatment group could be compared. Without a control group, there is less assurance that the detected changes are actually due to the Family Skills program (and not due to other factors, such as the passage of time).

In a naturalistic setting, it can be difficult to maintain the fidelity of the treatment, ensuring that the same format and content are presented to each group of participants. There were no differences detected on any of the measures as a result of year of program participation, which provides some evidence that there were no cohort effects. The present study was also limited by a relatively homogenous sample with regard to ethnicity and relationship to family member with mental illness. Caution must be taken when generalizing these results.

A major limitation of the present study is the small sample size. There was limited power to detect treatment effects, and the types of analyses that could be conducted were also restricted. The moderate effect sizes detected in several analyses provide support for

actual treatment effects; however, a larger sample size would provide more opportunity to elucidate all of the potential benefits of the Family Skills program.

Conclusion and Future Research

The present study provides initial support for the effectiveness of the Family Skills program, and this study may be considered a pilot investigation of the program. There is enough evidence of the effectiveness of the program demonstrated by the present archival data to warrant a more controlled, experimental inquiry. A design utilizing a control condition of some kind (such as a comparison group or a waitlist condition) would provide more substantial support for the effects of the program. The addition of follow-up data at one or more time points after the completion of the program would also help to demonstrate whether or not Family Skills contributes to lasting effects (or additional changes that occur later). Finally, the inclusion of measures that capture positive change or growth (such as increased knowledge or sense of mastery) may help to further expound the utility of the Family Skills program. In future studies of this nature, researchers may benefit from developing new measures that can capture the positive changes that are likely to occur as a result of Family Skills. These may include assessments of knowledge, acceptance, sense of competence and mastery, and ability to validate.

Future research into family-oriented DBT programs will benefit from attempting to identify the specific mechanisms of change that account for reductions in symptomology (or increases in positive change). Qualitative approaches, such as the use of semi-structured interviews, would allow family members to reflect upon and articulate exactly how they believe that their participation in these programs has helped them. This

kind of information would provide valuable insight for both researchers and clinicians. Once researchers have established the mechanisms of change, clinicians may focus their efforts on refining these programs to provide the maximum benefits. Program variations may be explored in future research to determine their impact. There may be utility in brief workshops that focus in-depth on one particular skill (such as validation). Alternatively, programs with longer durations (such as six months or one year) may provide an opportunity to further build a sense of support and community within the family members.

Future research also is needed to determine the impact of the Family Skills program on the entire family. Pre-treatment and post-treatment measures of the functioning of both family members and their relatives with mental illness would provide more information about the potential benefits of these programs. Additionally, the inclusion of measures of relationship functioning would help to elucidate how changes may occur within families. The initial evidence supporting the effectiveness of family-oriented DBT programs is promising, and further investigation is worthwhile.

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