

Preliminary Data on an Acceptance-Based Emotion Regulation Group Intervention for Deliberate Self-Harm Among Women With Borderline Personality Disorder

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Borderline personality disorder (BPD) and deliberate self-harm are clinically important conditions for which additional economically and clinically feasible interventions are needed. Literature on both the emotion regulating and experientially avoidant function of self-harm and the role of emotional dysfunction in BPD provided the rationale for developing a group intervention targeting emotion dysregulation among self-harming women with BPD. This study provides preliminary data on the efficacy of this new, 14-week, emotion regulation group intervention, designed to teach self-harming women with BPD more adaptive ways of responding to their emotions so as to reduce the frequency of their self-harm behavior. Participants were matched on level of emotion dysregulation and lifetime frequency of self-harm and randomly assigned to receive this group in addition to their current outpatient therapy ($N = 12$), or to continue with their current outpatient therapy alone for 14 weeks ($N = 10$). Results indicate that the group intervention had positive effects on self-harm, emotion dysregulation, experiential avoidance, and BPD-specific symptoms, as well as symptoms of depression, anxiety, and stress. Participants in the group treatment condition evidenced significant

changes over time on all measures, and reached normative levels of functioning on most. While these preliminary results are promising, the study's limitations require their replication in a larger-scale randomized controlled trial.

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BORDERLINE PERSONALITY DISORDER (BPD) is associated with severe dysfunction across multiple domains (Gunderson, 2001; Skodol A. E., Gunderson, J. G., Pfohl, B., Widiger, T. A., Livesley, W. J., & Siever, L. J., 2002) and was historically considered to be quite intractable and treatment-resistant, with clinically significant change observed only after years of treatment. One particularly troublesome behavior common among individuals with BPD is deliberate self-harm (the deliberate, *direct* destruction or alteration of body tissue without conscious suicidal intent, but resulting in injury severe enough for tissue damage to occur; see Gratz, 2001). Self-harm behavior, one of the diagnostic criteria for BPD, occurs among as many as 70% to 75% of individuals with BPD (Gunderson, 2001; Linehan, 1993), and was originally identified as the “behavioral specialty” of individuals with this disorder (Mack, 1975). This clinically important behavior is associated with a range of negative emotional, interpersonal, and physical consequences (Favazza, 1992; Leibenluft, Gardner, & Cowdry, 1987; Linehan, 1993; Tantam & Whittaker, 1992). However, despite its clinical relevance, there are few empirically supported treatments for self-harm (Favazza, 1992; Walsh & Rosen, 1988).

Two treatments that have been found to be efficacious in the treatment of both BPD and self-harm are Dialectical Behavior Therapy (DBT; Linehan, 1993; Linehan, Armstrong, Suarez,

Allmon, & Heard, 1991) and Mentalization-Based Treatment (MBT; Bateman & Fonagy, 1999, 2001, 2004). Despite their efficacy, however, these treatments are not always easily implemented in traditional clinical settings. For instance, DBT often is not offered in its full and empirically supported package (i.e., weekly group skills training, individual therapy, and therapist consultation/supervision meetings, as well as telephone consultation as needed between clients and individual therapists). Moreover, the requirement of a long-term commitment (i.e., 1 year) may be difficult or prohibitive for some clients. Similarly, MBT currently has empirical support only as an 18-month-long partial hospitalization program—a duration that is rarely available (see Gunderson, Gratz, Neuhaus, & Smith, 2005). Therefore, additional interventions for self-harm and BPD that are more economically and clinically feasible are needed (see Blum, Pfohl, St. John, Monahan, & Black, 2002; Evans et al., 1999).

Treatments utilizing a time-limited group format may be particularly promising in this regard, as they may be less costly to offer than individual therapy and have the potential to reach a larger number of clients (Blum et al., 2002; Gunderson, 2001). Moreover, group modalities are particularly useful for providing validation, increasing social support, and reducing shame (Najavits, Weiss, & Liese, 1996), all of which are important in the treatment of BPD (Gunderson, 2001; Linehan, 1993). Notably, there is preliminary support for the utility of group interventions in the treatment of both BPD and parasuicidal (including self-harm) behavior (see Monroe-Blum & Marziali, 1995; Wood, Trainor, Rothwell, Moore, & Harrington, 2001).

However, in order to be effective, any time-limited approach must have a specific and well-defined focus. Functional analytic approaches to psychopathology suggest that effective interventions address the function of maladaptive behaviors and symptom presentations (see Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Self-harm has been conceptualized as serving an emotion-regulating function (Gratz, 2003; Linehan, 1993)—a conceptualization with empirical support (Briere & Gil, 1998; Brown, Comtois, & Linehan, 2002). Moreover, empirical and theoretical literature suggests that the particular way in which self-harm operates to regulate emotions is through experiential avoidance (i.e., attempts to avoid unwanted internal experiences; Hayes et al., 1996; for a review of this literature on self-harm, see Gratz, 2003). A focus on emotion regulation may be particularly relevant for individuals with BPD, given the central role of emotional dysfunction in BPD

(Koenigsberg et al., 2002; Linehan, 1993; Livesley, Jang, & Vernon, 1998).

The above literature provided the rationale for developing a group intervention targeting emotion dysregulation in general (and emotional avoidance in particular) among self-harming women with BPD. The conceptual definition of emotion regulation on which this group is based (see Gratz & Roemer, 2004) emphasizes the functionality of emotions, and was influenced most directly by theoretical literature on emotion regulation in childhood (Cole, Michel, & Teti, 1994; Thompson, 1994). Whereas much of the literature on emotion regulation in adulthood emphasizes the control and reduction of negative emotions, the childhood literature emphasizes the functionality of emotions and the problems associated with deficits in the capacity to experience the full range of emotions. Thus, rather than equating regulation with “control,” the approach used here conceptualizes emotion regulation as a multidimensional construct involving the: (a) awareness, understanding, and acceptance of emotions; (b) ability to engage in goal-directed behaviors, and inhibit impulsive behaviors, when experiencing negative emotions; (c) flexible use of situationally appropriate strategies to modulate the intensity and/or duration of emotional responses, rather than to eliminate emotions entirely; and (d) willingness to experience negative emotions as part of pursuing meaningful activities in life (Gratz & Roemer, 2004). As such, an emphasis is placed on the control of behavior when emotions are present, rather than the control of emotions themselves. Moreover, within the context of a time-limited intervention, an explicit focus on the potentially paradoxical effects of attempts to avoid emotions (see Hayes et al., 1996; Levitt, Brown, Orsillo, & Barlow, 2004) was considered to be important.

The present study provides preliminary data on the efficacy of this new, time-limited, emotion regulation group intervention for self-harm behavior among women with BPD. To this end, outpatients at McLean Hospital and in the greater Boston area were randomly assigned to receive this group in addition to their current outpatient therapy (group intervention plus treatment as usual [TAU]), or to continue with their current outpatient therapy alone for 14 weeks (TAU waitlist). These two conditions were compared on outcome measures of emotion dysregulation, emotional avoidance, and self-harm frequency, among others. By controlling for common factors and nonspecific effects (through the continuation of TAU across both conditions), this additive design allows for conclusions to be drawn regarding the

effects of the group intervention. The addition of this group to TAU was expected to have a positive effect on the measured outcomes, given the group's explicit focus on emotion dysregulation and avoidance (compared to TAU, wherein the focus on these processes may be less direct).

Method

PARTICIPANTS

Participants were obtained through referrals by clinicians at McLean Hospital and in private practice in the greater Boston area, as well as self-referrals by potential clients in response to advertisements for an "emotion regulation skills group for women with self-harm" posted at McLean Hospital and on two Web sites. All provided written informed consent. Potential participants were screened by a doctoral-level trainee or postdoctoral fellow trained in the administration of the assessment interviews. Inclusion criteria for the study included: (a) meeting five or more criteria for BPD and receiving a score of 8 or higher on the Revised Diagnostic Interview for Borderlines (Zanarini, Gunderson, Frankenburg, & Chauncey, 1989); (b) reporting a history of repeated deliberate self-harm, with at least one episode in the past 6 months; (c) having an individual therapist; and (d) being 18 to 60 years of age. Exclusion criteria included: (a) having a diagnosis of a psychotic disorder, bipolar I disorder, and/or substance dependence; (b) reporting one or more suicide attempts rated as having a "high" risk of death or greater within the past 6 months; and (c) reporting greater than "some chance" (i.e., the midpoint of the scale) of attempting suicide within the next year. Finally, given that DBT is an empirically supported treatment for self-harm often available at McLean Hospital, an additional exclusion criterion was participation in a DBT skills group within the past 6 months (ensuring that any observed treatment effects are not attributable to the effects of DBT).¹

Participants meeting inclusion and exclusion criteria were matched on level of emotion dysregulation and number of lifetime incidents of self-harm and randomly assigned to either the group treat-

ment plus TAU condition or the TAU waitlist condition. Participants assigned to the treatment condition received the group intervention (consisting of 14 weekly, 1.5 hour sessions) in addition to TAU, and waitlist participants received TAU for 14 weeks. Two participants dropped out of the study (one from each condition), resulting in a dropout rate of 8%. The final sample size was 22 (group treatment + TAU condition = 12; TAU waitlist condition = 10). Participants were White (100%), ranged in age from 19 to 58 (mean = 33.32, $SD = 9.98$), and were predominantly single, highly educated, and financially secure. See Table 1 for complete information on the demographic and clinical characteristics of participants in each condition.

TREATMENTS

Emotion regulation group intervention. The emotion regulation group assessed in this study is a 14-week, acceptance-based, behavioral group based on the multidimensional conceptualization of emotion regulation described above. This group draws heavily from Acceptance and Commitment Therapy (Hayes et al., 1999) and DBT (Linehan, 1993), and includes aspects of emotion-focused psychotherapy (Greenberg, 2002) and traditional behavior therapy as well. Table 2 provides an outline of the specific topics addressed in the group each week. Week 1 focuses on the function of self-harm behavior, providing psychoeducation and assisting clients in identifying the functions of their own self-harm; as such, the first session is expected to target the shame often associated with this behavior. Following this, Weeks 2 through 6 focus on increasing emotional awareness and clarity. During these weeks, clients are assisted in improving their ability to identify, label, and differentiate between emotional states. An emphasis is placed on the functionality of primary emotional responses, and clients are encouraged to identify both the information being provided by their primary emotions, as well as adaptive ways of acting on this information. This emphasis on the functionality of emotions is expected to increase emotional acceptance.

Weeks 7 and 8 emphasize the experiential benefits and emotion-regulating consequences of emotional acceptance, as well as the potentially paradoxical long-term consequences of emotional avoidance. Clients are taught that emotional nonacceptance and avoidance may amplify emotions and contribute to the experience of emotions as undesirable and negative. A distinction is drawn between emotional pain (which is a necessary part of life) and emotional suffering (which includes

¹Four weeks into the group, one participant in the treatment condition reported joining a DBT skills group for which she had been on a waiting list for several months. Results do not change depending upon whether or not this participant was included in analyses. If anything, effect sizes are slightly (albeit nonsignificantly) larger when the participant is excluded from analyses; therefore, it was considered a more conservative, and accurate, test of the treatment effects to include her in the analyses.

Table 1
Demographic and clinical characteristics of participants by condition ($n = 22$)

	ER Group + TAU ($n = 12$)	TAU ($n = 10$)
Age	$mean = 33.00$ ($SD = 12.47$)	$mean = 33.70$ ($SD = 12.56$)
Sexual orientation: Lesbian	33.3% ($n = 4$)	20.0% ($n = 2$)
Marital status: Single	58.3% ($n = 7$)	80.0% ($n = 8$)
Education:		
Some college	16.7% ($n = 2$)	20.0% ($n = 2$)
College graduate	41.7% ($n = 5$)	30.0% ($n = 3$)
Graduate school	25.0% ($n = 3$)	40.0% ($n = 4$)
Income: >\$50,000	66.7% ($n = 8$)	70.0% ($n = 7$)
Number of BPD criteria (DIPD-IV)	$mean = 7.67$ ($SD = 1.50$)	$mean = 7.30$ ($SD = 1.49$)
Suicide attempt in lifetime	50.0% ($n = 6$)	60.0% ($n = 6$)
Suicide attempt past year	16.7% ($n = 2$)	20.0% ($n = 2$)
Self-harm frequency in past 3 mos.	$mean = 18.58$ ($SD = 26.63$)	$mean = 20.67$ ($SD = 25.73$)
Inpatient hospitalization past year	58.3% ($n = 7$)	60.0% ($n = 6$)
DBT skills group in lifetime	16.7% ($n = 2$)	20.0% ($n = 2$)
Total hours/week of TAU	$mean = 2.10$ ($SD = 1.56$)	$mean = 2.95$ ($SD = 2.78$)
Hours/week individual therapy	$mean = 1.40$ ($SD = .82$)	$mean = 1.35$ ($SD = .49$)
Hours/week group therapy	$mean = .38$ ($SD = .71$)	$mean = 1.50$ ($SD = 2.55$)
% in group therapy	25.0% ($n = 3$)	40.0% ($n = 4$)
Hours/week self-help groups	$mean = .33$ ($SD = 1.15$)	$mean = .10$ ($SD = .32$)
% in self-help groups	8.3% ($n = 1$)	10.0% ($n = 1$)
Number psychiatric medications	$mean = 3.42$ ($SD = 1.93$)	$mean = 3.90$ ($SD = 2.08$)

secondary emotional responses and failed attempts at emotional control/avoidance). Clients are taught that emotional acceptance results in less *suffering* than emotional avoidance, as it prevents the amplification of emotional arousal (despite not necessarily reducing the primary emotional response). In addition to receiving psychoeducation on the long-term consequences of these approaches, clients are encouraged to actively monitor and assess the different *experiential* consequences of emotional willingness (i.e., an active process of being open to emotional experiences as they arise) versus emotional unwillingness. Weeks 9 and 10 are the first to emphasize behavioral change, with Week 9 teaching nonavoidant strategies that may be useful in modulating the intensity and/or duration of an emotional response (with a distinction made between distraction and avoidance strategies), and

Week 10 teaching basic behavioral strategies for impulse control (including consequence modification and behavioral substitution). Finally, Weeks 11 through 14 focus on identifying and clarifying valued directions (i.e., those things in life that matter or are meaningful to the individual) and engaging in actions consistent with these directions, with an emphasis placed on moment-to-moment choices in everyday living and process rather than outcome. As such, valued directions require a present-moment focus and are distinguished from goals (i.e., future-oriented, static outcomes).

The group modules are primarily didactic in nature, combining psychoeducation and in-group exercises. An emphasis is placed on the importance of skill generalization and daily practice, and regular homework assignments are considered to be an essential component of the group. Throughout the treatment, clients complete daily monitoring forms on the emotional precipitants of their urges to self-harm, as well as the consequences of their behavioral choice (i.e., whether they engaged in self-harm or not). Additional daily monitoring forms are tailored to the particular module, and include identifying emotions and the information provided by these emotions, distinguishing between primary and secondary emotions, identifying the consequences of emotional unwillingness versus willingness, and engaging in actions consistent with valued directions. Worksheets, handouts, and

Table 2
Content of emotion regulation group modules

Week 1	Function of self-harm behavior
Week 2	Function of emotions
Weeks 3–4	Emotional awareness
Week 5	Primary vs. secondary emotions
Week 6	Clear vs. cloudy emotions
Weeks 7–8	Emotional avoidance/unwillingness vs. emotional acceptance/willingness
Week 9	Nonavoidant emotion regulation strategies
Week 10	Impulse control
Weeks 11–12	Valued directions
Weeks 13–14	Commitment to valued actions

monitoring forms have been developed for each module; a more detailed manual for group leaders is currently in preparation.

Treatment as usual. All study participants continued with their current outpatient treatment over the course of the study. As mentioned above, participants were required to have an individual therapist in order to enter the study. Participants in each condition received, on average, more than 1 hour of individual therapy per week (see Table 1), with 33% of participants in the treatment condition and 30% of those in the waitlist condition receiving 2 or more hours of individual therapy per week. The majority of these therapists (64%) were in private practice, and 27% worked in a teaching hospital of Harvard Medical School. In regard to their training, 41% were clinical psychologists, 27% were psychiatrists, and 32% were licensed clinical social workers. In addition to individual therapy, 32% of the participants attended group therapy at a Harvard Medical School–affiliated teaching hospital, and 9% attended self-help groups (e.g., AA, NA). The average number of hours spent in TAU per week was 2.10 ($SD = 1.56$) for the treatment condition and 2.95 ($SD = 2.78$) for the waitlist condition, with 50% of participants in the treatment condition and 60% of those in the waitlist condition receiving 2 or more hours of TAU per week. Because participants in the waitlist condition averaged almost an hour more of TAU per week than those in the treatment condition, the average number of hours spent in therapy per week did not differ significantly between groups, even after including the additional 1.5 hours of therapy time associated with the group intervention (treatment = 3.60, waitlist = 2.95, $t < 1.00$, $p > .10$); however, given the small sample size, the lack of a statistically significant difference must be interpreted with caution. See Table 1 for further details on the components of TAU for each condition (none of which differed significantly by group).

Assessment measures. The following instruments were administered during the initial assessment interview in order to screen potential participants and collect baseline data on the variables of interest: (a) the Diagnostic Interview for DSM-IV Personality Disorders (Zanarini, Frankenburg, Sichel, & Young, 1996), used to diagnose BPD; (b) the Revised Diagnostic Interview for Borderlines (Zanarini et al., 1989), used to provide confirmatory support for the BPD diagnosis; (c) the Structured Clinical Interview for DSM-IV Axis I Disorders (First, Spitzer, Gibbon, & Williams, 1996), used to determine if participants met diagnostic criteria for a psychotic disorder, bipolar I

disorder, and/or substance dependence; (d) a modified version of the Lifetime Parasuicide Count (Linehan & Comtois, 1996), used to assess lifetime history of suicidal behaviors; (e) an interview version of the Deliberate Self-Harm Inventory (Gratz, 2001), used to assess lifetime history of self-harm behaviors; (f) the Parasuicidal History Interview (Linehan, Wagner, & Cox, 1983), used to assess self-harm and suicidal behaviors within the past year; and (g) the Treatment History Interview (Linehan & Heard, 1987), used to assess type and frequency of psychiatric treatment within the past year. In addition, participants completed a brief questionnaire packet consisting of: (a) a modified version of the Suicidal Behaviors Questionnaire (Linehan, 1996), used to assess current suicidal intent; (b) the Difficulties in Emotion Regulation Scale (Gratz & Roemer, 2004), used to determine baseline levels of emotion dysregulation; and (c) the Demographic Data Schedule (Linehan, 1982), used to obtain a wide range of demographic data.

The following self-report measures, administered before and after treatment, were used to assess outcome.

Deliberate self-harm inventory. The Deliberate Self-Harm Inventory (DSHI; Gratz, 2001) is a 17-item, behaviorally based questionnaire that assesses various aspects of deliberate self-harm (including frequency, duration, and type of self-harming behavior) over specified time periods. The DSHI has been found to have high internal consistency ($\alpha = .82$), adequate construct, convergent, and discriminant validity, and adequate test-retest reliability (Gratz, 2001). For the present study, a continuous variable measuring frequency of reported self-harm over the specified time period (i.e., in the 3.5 months prior to the study, since the last assessment, etc.) was created by summing participants' scores on the frequency questions for each item.

Difficulties in emotion regulation scale. The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) is a 36-item measure that assesses individuals' typical levels of emotion dysregulation across six separate domains: nonacceptance of negative emotions, inability to engage in goal-directed behaviors when experiencing negative emotions, difficulties controlling impulsive behaviors when experiencing negative emotions, limited access to emotion regulation strategies perceived as effective, lack of emotional awareness, and lack of emotional clarity. The DERS has been found to have high internal consistency ($\alpha = .93$), good test-retest reliability, and adequate construct and predictive validity (Gratz & Roemer, 2004). Items were

recoded so that higher scores indicated greater emotion dysregulation, and a sum was calculated.

Acceptance and action questionnaire. The Acceptance and Action Questionnaire (AAQ; Hayes et al., 2004) is a 9-item measure of experiential avoidance, or the tendency to avoid unwanted internal experiences. Although the AAQ was developed as a measure of the tendency to avoid internal experiences in general, many items focus on the avoidance of emotions. Example items include, "I try hard to avoid feeling depressed or anxious" and "Anxiety is bad." The AAQ has been found to have adequate internal consistency ($\alpha = .70$), as well as adequate convergent, discriminant, and concurrent validity (Hayes et al., 2004). Items were recoded so that higher scores indicated greater experiential avoidance, and a sum was calculated.

Borderline evaluation of severity over time. The Borderline Evaluation of Severity over Time (BEST; Pfohl & Blum, 1997) assesses the degree of impairment or interference from each of the nine BPD criteria over the past month. The BEST assesses BPD-specific symptom severity across three domains: negative thoughts and feelings, negative behaviors, and positive behaviors. Preliminary data suggest that this measure has high internal consistency and adequate convergent and discriminant validity (Blum et al., 2002).

Depression anxiety stress scales. The Depression Anxiety Stress Scales (DASS; Lovibond & Lovibond, 1995b) is a 42-item questionnaire that provides separate scores of depression, anxiety, and stress. Within clinical samples, the DASS has been found to have good internal consistency and test-retest reliability (Brown, Chorpita, Korotitsch, & Barlow, 1997), as well as adequate construct and discriminant validity (Antony, Bieling, Cox, Enns, & Swinson, 1998; Brown et al., 1997; Lovibond & Lovibond, 1995a). This study used a 21-item version of the DASS (found to be comparable to the 42-item version; Antony et al., 1998) to assess general psychiatric symptoms. Although we thought that this group intervention could have a positive effect on these symptoms, DBT did not have a unique effect on depression beyond TAU (Linehan et al., 1991), and MBT required 9 months of treatment to demonstrate an effect on depression and anxiety (Bateman & Fonagy, 1999); thus, no predictions were made as to whether or not this short-term group intervention would have an effect on these symptoms.

PROCEDURE

Potential participants were screened upon referral to the study. During this initial meeting, participants were informed that the purpose of the study

was to examine the usefulness of a new cognitive-behavioral group treatment, developed to increase emotion regulation and decrease self-harm. Participants were informed that the group teaches skills to: increase emotional awareness, clarity, and acceptance; modulate emotional intensity; control impulsive behaviors; and act in accordance with desired goals when distressed. Participants were also informed that they would be randomly assigned either to receive the group immediately (as soon as enough people had been screened), or to receive the group approximately 3.5 months later.

Random assignment to condition occurred as soon as enough participants had been screened; therefore, time between initial screening interview and randomization differed between participants, ranging from less than 1 week to approximately 3 months (mean = 35 days). Pretreatment assessments (following randomization) were completed, on average, approximately 2 weeks prior to the start of the group; posttreatment assessments were completed within 1 week following the end of the group. During each assessment, participants were brought into the office, greeted by a member of the research team, provided with a questionnaire packet, and instructed to complete the questionnaires "as honestly and accurately as possible." Research team members were not blind to condition; however, all outcome measures were self-report, and there was limited interaction between participants and assessors.

Results

Before conducting analyses, a square root transformation was used to transform the positively skewed and kurtotic DSHI frequency scores.

A series of *t*-tests and chi-square analyses were conducted on demographic and clinical characteristic variables to determine equivalence across conditions. Results indicate no significant between-group differences on any of these variables. Furthermore, a series of one-way (group treatment + TAU vs. TAU waitlist) ANOVAs were conducted on pretreatment scores on assessment measures. Results indicate no significant between-group differences (all *F*s < 1.00), with one exception: the treatment group reported significantly higher scores than the waitlist group on the DERS lack of clarity subscale, $F(1, 20) = 5.03, p < .05$.

In order to determine treatment effects, a series of one-way (group treatment + TAU vs. TAU waitlist) ANCOVAs (controlling for pretreatment scores) were conducted on posttreatment scores on assessment measures (see Table 3 for means and standard deviations for assessment measures at pre- and

Table 3

Means, standard deviations, within group repeated measures analyses of variance (ANOVAs) assessing change over time, and one-way analyses of covariance (ANCOVAs) assessing effects of group treatment on outcome measures (controlling for pretreatment scores)

Outcome	ER Group + TAU (<i>n</i> = 12)			TAU (<i>n</i> = 10)			ANCOVA
	Pre-Mean (<i>SD</i>)	Post-Mean (<i>SD</i>)	ANOVA <i>F</i> (1, 11) η_p^2	Pre-Mean (<i>SD</i>)	Post-Mean (<i>SD</i>)	ANOVA <i>F</i> (1, 9) η_p^2	<i>F</i> (1, 19) η_p^2
DSHI Self-harm Frequency	18.58 (26.63)	5.00 (4.94)		20.67 (25.73)	30.33 (35.08)		
Transformed DSHI scores	3.53 (2.59)	2.05 (0.93)	6.04*	3.81 (2.64)	4.48 (3.39)	0.32 ^a	5.71 ^{b,*} 0.24
DERS Emotion Dysregulation	127.92 (19.99)	79.75 (23.97)	44.85**	119.90 (20.86)	115.80 (16.74)	0.62	22.66** 0.54
Emotion non- acceptance	22.83 (7.21)	14.00 (7.02)	18.81**	19.90 (6.62)	19.90 (5.76)	0.00	9.74** 0.34
Impulse dyscontrol	18.25 (5.89)	10.92 (3.85)	34.35**	19.20 (4.37)	17.10 (5.34)	1.68	11.51** 0.38
Goal-directed bx difficulties	19.83 (5.04)	13.25 (4.96)	17.29**	19.80 (3.29)	19.10 (2.08)	0.24	12.28** 0.39
Emotion non- awareness	19.67 (3.94)	12.58 (5.12)	27.04**	18.50 (6.02)	18.40 (5.54)	0.01	12.22** 0.39
Lack of ER strategies	29.42 (5.09)	16.75 (4.81)	51.07**	28.50 (6.26)	27.60 (4.14)	0.39	38.86** 0.67
Lack of clarity	17.92 (3.78)	12.25 (3.36)	19.21**	14.00 (4.42)	13.70 (3.77)	0.04	2.32 0.11
AAQ Emotional Avoidance	44.33 (8.14)	31.58 (4.83)	50.34**	45.60 (5.02)	45.40 (4.20)	0.02	66.75** 0.78
BEST BPD Severity	37.67 (12.11)	25.83 (5.72)	21.65**	37.30 (11.91)	34.70 (10.81)	0.63	9.63** 0.34
DASS Depression	19.17 (8.29)	9.00 (6.52)	20.44**	23.60 (12.82)	23.20 (15.32)	0.01	7.99* 0.30
DASS Anxiety	14.50 (11.79)	6.33 (6.49)	17.62**	17.00 (9.20)	14.00 (9.98)	3.35	8.66** 0.31
DASS Stress	22.33 (9.34)	13.67 (4.50)	13.72**	23.40 (11.16)	21.00 (7.73)	0.68	9.32** 0.33

Note. ER = emotion regulation; TAU = treatment as usual; DSHI = Deliberate Self-Harm Inventory (Gratz, 2001); DERS = Difficulties in Emotion Regulation Scale (Gratz & Roemer, 2004); AAQ = Acceptance and Action Questionnaire (Hayes et al., 2004); BEST = Borderline Evaluation of Severity over Time (Pfohl & Blum, 1997); BPD = borderline personality disorder; DASS = Depression Anxiety Stress Scales (Lovibond & Lovibond, 1995b).

^a *df* = (1,8).

^b *df* = (1,18).

* *p* < .05.

** *p* < .01.

posttreatment, as well as *F*-test statistics and effect size estimates). Results indicate significant between-group differences (with large effects sizes) on all measures, with one exception: the DERS lack of clarity subscale. To determine if changes over time within each group were significant, a series of one-way (pre- vs. posttreatment) repeated-measures ANOVAs were conducted on assessment measures within each group separately (see Table 3). Whereas the waitlist group evidenced no significant changes over time on any measures, the treatment group evidenced significant changes (with large effect sizes) on all measures. Moreover, the treatment group reached normative levels of functioning on measures of emotion dysregulation (mean DERS among female college students = 77.99; Gratz & Roemer, 2004), experiential avoidance (mean AAQ among nonclinical female samples ranges from 32.2 to 35.1; Hayes et al., 2004), and depression,

anxiety, and stress (normal levels on the DASS range from 0 to 9 for depression, 0 to 7 for anxiety, and 0 to 14 for stress; Roemer, 2001). Normative data have not been published on the measure of BPD symptom severity (Pfohl & Blum, 1997).

In order to determine the clinical significance of the treatment effects, an approach consistent with that proposed by Jacobson and Truax (1991) was utilized, requiring that participants (a) report a statistically reliable magnitude of change, and (b) reach normative levels of functioning.² In regard to general psychiatric symptoms, 50% of participants

²The DERS was the only measure with available test-retest reliability data, precluding the calculation of Jacobson and Truax's (1991) reliable change index (RCI) to determine statistically reliable change for measures other than the DERS. In order to approximate the RCI and provide data on the magnitude of change reported by participants, scores that changed by at least one *SD* from pre- to posttreatment were considered to be statistically reliable.

in the treatment group reported both a reliable improvement in depressive symptoms and scores falling within the normal range for depression; 33% reported a reliable improvement in anxiety symptoms, although only half of these (i.e., 17% of the treatment group) reached normal levels of anxiety; and 67% reported a reliable improvement in stress symptoms, with 42% reporting normal levels of stress and 25% reporting improvement but not recovery. In regard to BPD symptoms, 50% of participants in the treatment group reported a reliable improvement from pre- to posttreatment. Although normative data have not been published on the BEST (Pfohl & Blum, 1997), we have pilot data indicating that the mean score among a small sample of outpatients without a personality disorder (non-PD) is 21.46 ($SD = 7.83$). Using this mean as an approximation of normal functioning in the realm of BPD symptoms, 8% of participants reported a score more likely to come from the non-PD sample than the BPD sample, and 33% reported scores within one SD of the mean of the non-PD sample. In regard to deliberate self-harm (for which no normative data are available), 42% of participants in the treatment group showed a reduction in self-harm of 75% or greater, 17% showed a reduction of 45% to 57%, and 16% showed a reduction of 25% to 33%. Of the remaining 25% of participants who did not evidence a substantial reduction in self-harm, all had reported only two episodes of self-harm in the 3 months prior to treatment.

Finally, in regard to the potential mediators specifically targeted by the group (i.e., emotional dysregulation and avoidance), 83% of participants in the treatment group reported reliable improvements in emotion dysregulation and experiential avoidance, and reached normal levels of functioning on both measures (i.e., scores within one SD of the mean for nonclinical samples, and closer to the mean of a normative population than a clinical population).

Discussion

Results suggest that this emotion regulation group intervention has positive effects on emotion dysregulation, experiential avoidance, and self-harm behavior, as well as BPD-specific symptoms and symptoms of depression, anxiety, and stress. Not only were the observed treatment effects statistically significant, many were clinically significant as well. Moreover, the treatment group reached normative levels of functioning on measures of emotion dysregulation, experiential avoidance, and depression, anxiety, and stress symptoms, and the

vast majority of participants (i.e., 83%) reached normative levels of functioning on the outcomes specifically targeted by the group: emotion dysregulation and experiential avoidance. While the results of this study are preliminary, it is likely that they are attributable to the effect of the treatment, given the use of an additive design and random assignment, as well as the absence of between-group differences in pretreatment scores on assessment measures and hours of therapy per week.

Considering that empirically supported, psychosocial treatments for BPD either have not had a unique effect on depression (Linehan et al., 1991) or have required 9 months of treatment to demonstrate such an effect (Bateman & Fonagy, 1999), the observed treatment effect on depressive symptoms was not predicted. However, this finding is understandable within the context of related research in other areas. First, given its emphasis on engaging in actions consistent with valued directions, this emotion regulation group may contain elements of, and actively promote, behavioral activation, which is thought to be the active ingredient in cognitive-behavioral therapies for depression (Jacobson et al., 1996). Behavioral activation has been shown to decrease depression in a relatively short time period (Jacobson, Martell, & Dimidjian, 2001) and to be a potentially useful adjunctive intervention for BPD (Hopko, Sanchez, Hopko, Dvir, & Lejuez, 2003). Second, the decrease in depressive symptoms may be secondary to a decrease in BPD-specific symptom severity, given that improvements in BPD psychopathology have been found to be followed by improvements in depression (Gunderson et al., 2004).

Results suggest the potential utility of adding this short-term group intervention to existing treatment as usual. First, treatment effects were observed despite the group not being paired with a particular form of individual therapy. That is, although all participants attended individual therapy, most of their therapists (i.e., greater than 75%) were predominantly non-cognitive-behavioral. Insofar as the utility of this group does not depend upon it being matched with a theoretically similar individual therapy, its portability and generalizability are likely to be increased. Second, the group had a low dropout rate, despite asking clients to simultaneously approach previously avoided emotions and refrain from engaging in previously relied upon coping strategies. Although this low dropout rate is likely helped by the group's relatively short duration, it may also reflect the way in which material is presented; that is, although clients are encouraged to practice emotional willingness, this is

framed as a *choice* that one may or may not make. Moreover, clients are informed that they are not expected to choose willingness all the time; rather, the goal is to become more aware of the choice-points and to choose willingness more often now than in the past. The fact that willingness is framed as a choice over which clients have control may help retain clients in the group despite the distressing material.

While the results of this pilot study are promising, they are also preliminary, and must be evaluated in light of the study's limitations. The primary limitation is that each group was led by the principal investigator (KLG), making it unclear as to whether these results are generalizable or the treatment is transportable. Moreover, the reliance on self-report measures of emotional responding and symptom severity may result in biased data. For instance, participants' responses may be influenced by social desirability and/or their ability to accurately report on their emotional responses. Finally, this study involved a relatively small and homogeneous sample of participants, limiting both the generalizability and statistical conclusion validity of the results.

The next step will be to examine if the gains observed in this pilot study are maintained after the group ends. Follow-up data are currently being collected to address this question. Further research is then needed to assess the generalizability of these results in a larger-scale randomized controlled trial (RCT), evaluating the efficacy of this treatment within other settings, using other group leaders, and across a more diverse group of clients. Whether and how this therapy compares to existing empirically supported treatments will also need to be examined. These steps will require the development of a more detailed treatment manual, as well as adherence and competency measures. Moreover, future research should include the use of both experimental outcome measures and masked assessments to decrease the likelihood of biases.

Finally, should the treatment effects observed in this pilot study be replicated in a larger RCT, an important goal for future research will be to examine potential mechanisms of change and identify the active ingredients of this treatment. Although this group is based on the theory that changes in symptomatology are the result of decreases in emotional avoidance and increases in emotional acceptance, other mechanisms of change may be at work. For instance, [Bateman and Fonagy \(2004\)](#) suggest that a shared mechanism underlying effective treatments for BPD is the enhancement of mentalization (i.e., the ability

to understand and reflect upon one's own and other's internal states and their relationship to behaviors); and [Lynch, Chapman, Rosenthal, Kuo, & Linehan \(in press\)](#) suggest that one mechanism of change associated with the dialectical strategies in DBT (through the provision of surprising or preference-inconsistent information) is the enhancement of the "orienting response" ([Pavlov, 1927](#)), which is thought to facilitate cognitive processing and increase learning. Given the present group's emphasis on increasing emotional awareness/clarity (consistent with mentalization), and challenging long-held beliefs about the controllability of internal experiences (likely surprising and preference-inconsistent), either of these may be mechanisms of change underlying this group. As for the active ingredients of this treatment, anecdotally, the 6 weeks focusing on emotional willingness and valued directions have generated the most enthusiasm from clients during and after treatment, and appear to be the basis of much of the observed improvements. Feedback from the clients who have completed this group and their therapists suggests that the clients have been strongly influenced by the discussion of valued directions, and continue to incorporate valued actions into their lives (which seems to have both increased emotion regulation/acceptance and decreased self-harm). However, the extent to which these components are the *active* ingredients of this group remains to be tested.

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