

Multidimensional Assessment of Emotion Regulation and Dysregulation: Development, Factor Structure, and Initial Validation of the Difficulties in Emotion Regulation Scale¹

Kim L. Gratz^{2,3,4} and Lizabeth Roemer²

Accepted August 8, 2003

Given recent attention to emotion regulation as a potentially unifying function of diverse symptom presentations, there is a need for comprehensive measures that adequately assess difficulties in emotion regulation among adults. This paper (a) proposes an integrative conceptualization of emotion regulation as involving not just the modulation of emotional arousal, but also the awareness, understanding, and acceptance of emotions, and the ability to act in desired ways regardless of emotional state; and (b) begins to explore the factor structure and psychometric properties of a new measure, the Difficulties in Emotion Regulation Scale (DERS). Two samples of undergraduate students completed questionnaire packets. Preliminary findings suggest that the DERS has high internal consistency, good test-retest reliability, and adequate construct and predictive validity.

KEY WORDS: emotion regulation; emotion dysregulation; assessment; experiential avoidance; deliberate self-harm.

Consistent with behavioral theories of psychopathology that highlight the importance of the function of problem behaviors rather than symptom picture (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996), increasing attention has been paid to emotion regulation as a potentially unifying function of diverse symptom presentations and maladaptive behaviors (Gross & Munoz, 1995). Although there is some preliminary literature on the role of emotion regulation deficits in a range of clinical disorders, including substance abuse (Hayes et al., 1996), generalized anxiety disorder (Mennin, Heimberg, Turk, & Fresco, 2002), and complex posttraumatic stress disorder (Cloitre, 1998), the most comprehensive work highlighting the role of emotion dysregulation in a clinical

disorder has been Linehan's theoretical work (Linehan, 1993) on the development of borderline personality disorder. Linehan proposes that emotion dysregulation is one of the central features of borderline personality disorder and underlies many of the associated behaviors of this disorder, including deliberate self-harm (a behavior thought to serve an emotion-regulating function). Her conceptualization of self-harm as an emotion regulation strategy is supported by both empirical and theoretical literature on the function of this behavior (see Briere & Gil, 1998; Gratz, 2003). It has been similarly suggested that the perpetration of violence toward others (e.g., intimate partners) may function to regulate emotions (Jakupcak, Lisak, & Roemer, 2002)—consistent with findings from experimental studies that aggressive behavior can serve an affect regulatory function (Bushman, Baumeister, & Phillips, 2001).

Despite its clinical significance, however, the role of emotion regulation deficits in the development and maintenance of clinical difficulties has not been adequately researched in adults. Likely contributing to the lack of research in this area is the absence of both consistent, agreed-upon conceptualizations of emotion regulation and comprehensive measures that adequately assess the

¹This research was part of the first author's dissertation, and portions were previously presented at the annual meeting of the Association for Advancement of Behavior Therapy in November, 2001.

²Department of Psychology, University of Massachusetts Boston, Boston, Massachusetts.

³Present address: Center for the Treatment of Borderline Personality Disorder, McLean Hospital, Harvard Medical School, Boston, Massachusetts.

⁴To whom correspondence should be addressed at McLean Hospital, 115 Mill Street, Belmont, Massachusetts 02478; e-mail: klgratz@aol.com.

complexity of this construct among adults. The purpose of the present study was to develop and validate a measure of clinically relevant difficulties in emotion regulation that is based on a comprehensive, integrative conceptualization of emotion regulation. This paper (a) reviews the extant literature on the conceptualization and measurement of emotion regulation (and dysregulation); (b) provides an integrative conceptualization of emotion regulation that may be used in future research in this area; and (c) begins to explore the factor structure and psychometric properties of a new measure of difficulties in emotion regulation, the Difficulties in Emotion Regulation Scale (DERS).

Some conceptualizations of emotion regulation emphasize the control of emotional experience and expression (especially the expressive control of negative emotions) and the reduction of emotional arousal (see Cortez & Bugental, 1994; Garner & Spears, 2000; Kopp, 1989; Zeman & Garber, 1996). In contrast, others emphasize the functional nature of emotions in conceptualizing emotion regulation, suggesting that emotion *regulation* is not synonymous with emotional *control* and, as such, does not necessarily involve immediately diminishing negative affect (Cole, Michel, & Teti, 1994; Thompson, 1994). These latter approaches suggest that deficiencies in the capacity to experience (and differentiate) the full range of emotions and respond spontaneously may be just as maladaptive as deficiencies in the ability to attenuate and modulate strong negative emotions (Cole et al., 1994; Gross & Munoz, 1995; Paivio & Greenberg, 1998). Similarly, some researchers have suggested that adaptive emotion regulation involves monitoring and evaluating emotional experience in addition to modifying it, highlighting the importance of the awareness and understanding of emotions (Thompson & Calkins, 1996).

The emphasis on the functionality of emotions is consistent with theory and research highlighting the potentially paradoxical, dysregulating effects of attempts to control emotional experience and expression (despite the fact that such emotional control has often been equated with emotion regulation, e.g., Garner & Spears, 2000; Zeman & Garber, 1996). Hayes et al. (1996) have suggested that efforts to avoid internal experiences (e.g., unwanted thoughts and feelings) underlie many psychological disorders—a theory with growing empirical support (see Stewart, Zvolensky, & Eifert, 2002). Further, both the general tendency to constrict emotional expression and experimental instructions to conceal one's emotional expressions have been associated with *increased* physiological arousal (Notarius & Levenson, 1979; Gross & Levenson, 1997), suggesting that attempts to control emotional *expression* may increase risk for emotion dysregulation

(given that high levels of arousal are more difficult to regulate; see Eisenberg, Cumberland, & Spinrad, 1998; Flett, Blankstein, & Obertynski, 1996). This literature suggests that an emphasis on the control, rather than the acceptance, of emotional responses may confound processes that undermine regulation with those that are regulatory. Therefore, some conceptualizations of emotion regulation emphasize the importance of accepting and valuing emotional responses (Cole et al., 1994; Linehan, 1993). Consistent with these approaches, researchers have suggested that the tendency to experience negative emotions in response to one's own emotional reactions (indicative of a lack of emotional acceptance) is maladaptive, and associated with greater difficulties in emotion regulation (Cole et al., 1994; Hayes, Strosahl, & Wilson, 1999; Paivio & Greenberg, 1998).

Researchers have suggested the necessity of considering the demands of the situation and goals of the individual when evaluating emotion regulation (Thompson, 1994; Thompson & Calkins, 1996), as emotion regulation can only be understood and evaluated within a specific context (Cole et al., 1994; Thompson, 1994). Knowledge of the specific emotion regulation strategies used by an individual, in the absence of information on the context in which they are used, may provide little information about the individual's ability to regulate her or his emotions effectively. Adaptive emotion regulation instead involves flexibility in the use of emotion regulation strategies (Cole et al., 1994; Thompson, 1994).

Researchers have also suggested that adaptive emotion regulation involves altering the intensity or duration of an emotion rather than changing the discrete emotion that is experienced (Thompson, 1994; Thompson & Calkins, 1996). In other words, adaptive regulation involves *modulating* the experience of emotions rather than *eliminating* certain emotions. This modulation of arousal is thought to be in the service of reducing the urgency associated with the emotion so that the individual is able to control her or his behavior (as opposed to controlling emotions themselves). These conceptualizations of emotion regulation emphasize the ability to inhibit inappropriate or impulsive behaviors, and behave in accordance with desired goals, when experiencing negative emotions (see Linehan, 1993; Melnick & Hinshaw, 2000).

On the basis of the above conceptual and empirical work, emotion regulation may be conceptualized as involving the (a) awareness and understanding of emotions, (b) acceptance of emotions, (c) ability to control impulsive behaviors and behave in accordance with desired goals when experiencing negative emotions, and (d) ability to use situationally appropriate emotion regulation strategies flexibly to modulate emotional responses as desired in order to meet individual goals and

situational demands.⁵ The relative absence of any or all of these abilities would indicate the presence of difficulties in emotion regulation, or emotion dysregulation.

Despite the clinical utility of assessing difficulties in emotion regulation, there are few measures of emotion regulation or dysregulation in adults. Most of the measures used to assess emotion regulation deficits are actually measures of closely-related constructs, leading some researchers to use multiple measures in an attempt to capture the construct of emotion regulation (see, e.g., Mennin et al., 2002).

The most commonly used measure of emotion regulation is Catanzaro and Mearns' Generalized Expectancy for Negative Mood Regulation Scale (NMR; Catanzaro & Mearns, 1990). The NMR measures beliefs that some "behavior or cognition will alleviate a negative state or induce a positive one" (p. 547), emphasizing the elimination and avoidance of negative emotions (as opposed to the ability to act in desired ways in the presence of these emotions). Many items on the NMR refer to particular emotion regulation strategies that people may use to modulate emotional arousal. This practice implies that emotion regulation strategies are adaptive regardless of context and that certain strategies are more adaptive than others universally—an implication that is inconsistent with conceptualizations of emotion regulation that emphasize the contextually dependent nature of adaptive regulation strategies (see Cole et al., 1994; Thompson, 1994; Thompson & Calkins, 1996). Moreover, many of the strategies listed in the NMR seem to equate emotion regulation with emotional avoidance (e.g., "When I'm upset, I believe that I won't be able to put it out of my mind" (negatively scored); or "When I'm upset, I believe that I can forget about what's upsetting me pretty easily"). Although the NMR does not assess some potentially important aspects of emotion regulation (such as the awareness, understanding, and acceptance of emotions), it does measure one important aspect of emotion regulation as conceptualized here: access to emotion regulation strategies perceived as effective.

Another measure occasionally used to capture the construct of emotion regulation is the Trait Meta-Mood Scale (TMMS; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995), which assesses "individual differences in the ability to reflect upon and manage one's emotions"

(Salovey et al., 1995, p. 126). Participants rate the degree to which they endorse a series of statements regarding their attitudes toward, and experience of, their emotions. Factor analyses have yielded three subscales (attention to feelings, clarity of feelings, and mood repair), each of which demonstrates good internal consistency and convergent validity. The TMMS assesses some aspects of emotion regulation that are absent from the NMR (e.g., emotional awareness and understanding), whereas the repair subscale is similar to the NMR in its emphasis on emotional avoidance (e.g., "I try to think good thoughts no matter how badly I feel"). The TMMS also does not include an assessment of the ability to engage in desired behaviors when experiencing negative emotions—the absence of which may be particularly important in the clinical realm.

The Difficulties in Emotion Regulation Scale (DERS) was developed to assess emotion dysregulation more comprehensively than existing measures. The DERS items were chosen to reflect difficulties within the following dimensions of emotion regulation: (a) awareness and understanding of emotions; (b) acceptance of emotions; (c) the ability to engage in goal-directed behavior, and refrain from impulsive behavior, when experiencing negative emotions; and (d) access to emotion regulation strategies perceived as effective. The final dimension reflects an attempt to measure the flexible use of situationally appropriate strategies to modulate emotional responses. Given the aforementioned limitations associated with the practice of delineating specific regulation strategies when attempting to measure emotion regulation (in particular, the implication that certain strategies are more adaptive than others regardless of context), the subjective appraisal of effectiveness was assessed instead, with the hope that this would take into account the contextually dependent nature of adaptive regulation strategies. The primary purpose of the two studies reported below was to begin to explore the factor structure and psychometric properties of the DERS, thereby aiding in the development of a theoretically-based, comprehensive, empirically validated measure of emotion dysregulation. The first study examined the factor structure, internal consistency, and construct and predictive validity of the DERS, and a second study examined the measure's test-retest reliability.

STUDY 1

Method

Participants

Questionnaire packets were distributed to 479 students from undergraduate psychology courses offered at

⁵In addition to its relationship to several conceptualizations of emotion regulation reviewed above, this definition shares many characteristics with Saarni's definition of "emotional competence," which includes awareness of one's emotional experience, the capacity for adaptive coping in response to distressing contexts or when experiencing aversive emotions, and acceptance and allowance of one's emotional experience (Saarni, 1999).

the University of Massachusetts Boston. Of these, 373 packets were returned, resulting in a response rate of 78%. There were no significant differences in age, racial background, or gender between participants who returned the packets and those who did not. As they were missing data on one or more of the variables of interest, 16 participants were excluded from the following analyses.

The final sample of 357 participants ranged in age from 18 to 55 years, with a mean age of 23.10 ($SD = 5.67$). Seventy-three percent ($n = 260$) of these participants were female. Sixty-five percent of participants self-identified as White, 17% as Asian, 8% as Black/African American, 4% as Hispanic, and 6% reported another or unspecified racial background. Participants were predominantly single (89%) and heterosexual (90%). There was little difference, demographically, between participants who completed all of the measures and those who did not.

Measures

Difficulties in Emotion Regulation Scale. The initial Difficulties in Emotion Regulation Scale (DERS) was a 41-item, self-report measure developed to assess clinically relevant difficulties in emotion regulation. The DERS items were developed and selected on the basis of numerous conversations with colleagues well versed in the emotion regulation literature. The NMR (Catanzaro & Mearns, 1990; see later) was used as a template and helped to structure the format of some of the items (although not the content of the items). Specifically, in order to assess difficulties regulating emotions during times of distress (when regulation strategies are most needed), many items begin with "When I'm upset," similar to the NMR. The content of the items differ, however, as DERS items were chosen to reflect difficulties within the following dimensions of emotion regulation: (a) awareness and understanding of emotions; (b) acceptance of emotions; (c) the ability to engage in goal-directed behavior, and refrain from impulsive behavior, when experiencing negative emotions; and (d) access to emotion regulation strategies perceived as effective. Participants are asked to indicate how often the items apply to themselves, with responses ranging from 1 to 5, where 1 is *almost never* (0–10%), 2 is *sometimes* (11–35%), 3 is *about half the time* (36–65%), 4 is *most of the time* (66–90%), and 5 is *almost always* (91–100%). For the purposes of this study, DERS items were recoded so that higher scores in every case indicated greater difficulties in emotion regulation (i.e., greater emotion dysregulation).

Generalized Expectancy for Negative Mood Regulation Scale. The Generalized Expectancy for Negative Mood Regulation Scale (NMR; Catanzaro & Mearns,

1990) is a 30-item, self-report questionnaire used to measure expectancies for the self-regulation of negative moods. The NMR asks participants to indicate the extent to which they believe that their attempts to alter their negative moods will work. The NMR has high internal consistency, and adequate construct and discriminant validity (Catanzaro & Mearns, 1990). The NMR also has adequate test-retest reliability over periods of 3–4 weeks ($r = .74$ for women; $r = .76$ for men) and 6–8 weeks ($r = .78$ for women; $r = .67$ for men; Catanzaro & Mearns, 1990).

Items were recoded so that higher scores in every case indicated higher expectancies for negative mood regulation (or greater emotion regulation), and a sum was calculated. Given that the NMR is the most commonly used, empirically supported measure of emotion regulation, it was included in the present study to assess the construct validity of the DERS.

Acceptance and Action Questionnaire. The Acceptance and Action Questionnaire (AAQ; Hayes et al., in press), is a nine-item, self-report measure of experiential avoidance (i.e., the tendency to avoid unwanted internal experiences, such as emotions and thoughts). Items assess experiential avoidance and control, negative evaluations of internal experience, psychological acceptance (or lack thereof), and the extent to which an individual acts regardless of emotional distress or, conversely, allows distress to prompt behavioral avoidance (Hayes et al., in press). Sample items include "I rarely worry about getting my anxieties, worries, and feelings under control (reverse scored)" and "If I could magically remove all the painful experiences I've had in my life, I would do so." The AAQ is significantly correlated with the tendency to engage in the suppression of thoughts in both clinical and nonclinical populations ($r_s = .44-.50$; Hayes et al., in press), providing preliminary evidence of its construct validity. There is also evidence that the AAQ assesses a unique, clinically relevant construct, as it remains significantly correlated with measures assessing a wide range of psychopathology when controlling for social desirability and the tendency to suppress thoughts (Hayes et al., in press).

Items on the AAQ were recoded so that higher scores in every case indicated greater experiential avoidance, and a sum was calculated. The AAQ was included to assess the construct validity of the DERS, and was expected to be positively associated with DERS scores (see Cole et al., 1994; Hayes et al., 1999; Hayes et al., 1996; Linehan, 1993; Paivio & Greenberg, 1998).

Emotional Expressivity Scale. The Emotional Expressivity Scale (EES; Kring, Smith, & Neale, 1994) is a 17-item, self-report questionnaire that assesses general emotional expressivity. The EES is based on the conceptual definition of emotional expressiveness as "the extent

to which people outwardly display their emotions” (p. 936, Kring et al., 1994), regardless of the valence of the emotion (i.e., positive or negative) or the manner in which it is expressed (i.e., facially, vocally, or gesturally). The EES has high internal consistency, and adequate convergent, discriminant, and construct validity (Kring et al., 1994). The EES is significantly correlated with spontaneous emotional expressiveness in the laboratory (as assessed by observer ratings of general expressivity in response to emotionally evocative film clips) among both college students ($r = .38$) and community residents ($r = .43$; Kring et al., 1994). The EES also has good test–retest reliability over a 4-week period ($r = .90$; Kring et al., 1994).

Items on the EES were recoded so that higher scores in every case indicated greater emotional expressivity, and a sum was calculated. The EES was included to assess the construct validity of the DERS. Contrary to some definitions of emotion regulation (see e.g., Garner & Spears, 2000; Zeman & Garber, 1996), the conceptualization of emotion regulation on which the DERS is based does not equate emotion regulation with expressive control. On the contrary, emotional expressiveness is expected to facilitate emotion regulation (see Linehan, 1993). Thus, the DERS was expected to be negatively correlated with EES scores of emotional expressivity.

Deliberate Self-Harm Inventory. The Deliberate Self-Harm Inventory (DSHI; Gratz, 2001) is a behaviorally based, self-report questionnaire that assesses 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). This measure is composed of 17 items and assesses various aspects of deliberate self-harm, including frequency, severity, duration, and type of self-harming behavior. The DSHI has high internal consistency ($\alpha = .82$), adequate construct, convergent, and discriminant validity, and adequate test–retest reliability over a period ranging from 2 to 4 weeks, with a mean of 3.3 weeks ($\phi = .68$, $p < .001$; Gratz, 2001).

For the present study, a continuous variable was created to measure frequency of reported self-harm behavior. Participants’ scores on the frequency questions for each of the 17 items were summed to create a variable of the total frequency of self-harm behavior. Given the growing body of literature on the emotion regulating function of self-harm behavior (see Gratz, 2003; Linehan, 1993), the DSHI was included in the present study to provide some preliminary data on the predictive validity of the DERS. The DERS was expected to be positively associated with frequency of self-harm behavior.

Abuse-Perpetration Inventory. The Abuse-Perpetration Inventory (API; Lisak, Conklin, Hopper, Miller,

Altschuler, & Smith, 2000) is a self-report, behaviorally based instrument that assesses childhood physical and sexual abuse as well as four types of perpetration. The API has been shown to have adequate criterion and construct validity (Lisak et al., 2000). The section of the API assessing perpetration behavior, the Perpetration History (PH) questionnaire, was used to assess the extent to which an individual had engaged in intimate partner abuse.

The PH is comprised of 28 items assessing four types of perpetration, including physical and sexual abuse of children and adults. Seven of these items describe specific experiences of intimate partner abuse, ranging from slapping one’s partner to attempting to kill one’s partner with a knife or gun. For each question answered “yes,” participants answer several follow-up questions regarding their age at the time, the age of their victim, and the frequency of the behavior. For this study, participants’ scores on the frequency questions for each of the seven items pertaining to intimate partner abuse were summed to create a variable of the total frequency of partner abuse. Given recent suggestions that the abusive behavior of men toward an intimate partner may function as an attempt to regulate emotions (e.g., by reducing distressing arousal; Jakupcak et al., 2002), the PH was included in the present study to provide preliminary data on the predictive validity of the DERS. Although the emotion regulating function of partner abuse has been suggested only for men, this relationship was examined among women as well.

Procedure

Participants were informed fully, both verbally and in writing, about the purpose of the study prior to participation, and signed a consent form describing the purpose of the study, the potentially distressing subject matter, and the confidential nature of the data (i.e., a code number was assigned to each questionnaire before the data were examined, the data were stored in a secure area, and access to the data was limited to the research team). Students who chose to participate in the study completed questionnaire packets consisting of the measures described above (see Measures) and other measures unrelated to the current study. Participants received research credits in exchange for their participation.

Results

Factor Structure

Exploratory factor analysis was used to provide preliminary data on the factor structure of the DERS and

identify the underlying dimensions of emotion regulation as assessed by this scale. As the conceptualization of emotion regulation on which the DERS was based is multifaceted, it was expected that this measure would be composed of different (albeit associated) factors, each reflecting a dimension of emotion regulation wherein difficulties may occur.

Preliminary Analyses. Prior to conducting the factor analyses, the response distributions of all individual DERS items were examined. As none of these variables were excessively skewed or kurtotic (Kendall & Stuart, 1958), no items were excluded from the analyses on the basis of their response distributions. However, upon inspection of the correlation matrix for all items, item 13 (“When I’m upset, I allow myself to feel that way”) was excluded from future analyses on the basis of its low correlations with the overall scale score ($r = .06, ns$), as well as the other scale items (mean r with other items = .01; 36 of 40 r s below .20). The decision to omit this item on the basis of its minimal association with the other variables was supported by the fact that, in a preliminary factor analysis of all items, the communality of item 13 upon extraction was below .30 (the only item for which this was the case).

Factor Analyses. Responses to the remaining 40 items were subjected to a common factor analysis (see Floyd & Widaman, 1995), using the principal axis factoring method of extraction and promax oblique rotation to allow for correlations among factors.

Given Floyd and Widaman’s suggestion that the scree test is a more accurate method for retaining factors than the more commonly used criterion of eigenvalues > 1.00 (the Kaiser-Guttman criterion), the scree test was used in the present study (Floyd & Widaman, 1995). The scree test suggested retaining six or seven factors, and thus analyses were conducted to examine the interpretability and utility of both six- and seven-factor solutions. As the six-factor solution was more interpretable (and the seven-factor solution contained a factor on which only two variables had primary loadings), six factors were retained in the final analyses.

In regard to item selection for the six factors, factor loadings of .40 and higher were considered meaningful. Items with loadings below .40 on all factors were excluded from further analyses. In addition, variables that appeared to have double loadings on two factors (i.e., loadings of greater than .40 and of comparable size) were excluded. On the basis of these criteria, four items were deleted following the first factor analysis. Items 2 (“I feel at ease with my emotions”), 11 (“My emotions make me uncomfortable”), and 18 (“When I’m upset, I become scared and fearful of those feelings”) had loadings of less than .40 on all factors, and item 36 (“When I’m upset, I know there

Table I. Factor Loadings for the 36 DERS Items Included in the Final Factor Analysis ($N = 357$)

Item	Factor					
	1	2	3	4	5	6
DERS29	.91	.09	−0.05	.14	−.19	−.10
DERS25	.76	−.07	0.01	.03	.06	.06
DERS15	.72	.07	−0.07	.03	−.07	.15
DERS14	.53	−.06	0.10	−.01	.19	.04
DERS33	.48	−.04	0.09	−.03	.35	.05
DERS27	.41	.04	0.11	.11	.25	−.14
DERS30	.14	.88	−0.10	−.03	−.10	.03
DERS22	.00	.88	0.05	−.16	−.09	.11
DERS16	−.01	.85	−0.03	−.03	.04	.02
DERS38	.07	.65	0.06	−.10	.18	−.05
DERS24	−.17	.64	0.11	.25	−.04	−.01
DERS37	.08	−.10	1.00	.06	−.11	−.11
DERS31	−.05	.05	.79	.09	.04	−.11
DERS17	−.03	.05	.75	−.04	−.02	.13
DERS23	−.06	−.00	.58	−.14	.24	.18
DERS4	.09	.04	.52	−.06	.02	.23
DERS28	−.10	.10	.40	.27	.08	−.08
DERS7	−.01	−.04	0.02	.74	−.01	.08
DERS3	−.11	−.00	−0.04	.67	.04	.21
DERS12	.15	−.08	−0.01	.61	−.05	−.04
DERS21	.17	−.05	0.03	.59	−.13	−.07
DERS9	−.00	−.14	0.07	.58	.06	.08
DERS39	.06	.15	0.10	.57	−.09	−.06
DERS20	.01	−.08	−0.01	−.01	.86	.04
DERS19	−.07	−.08	0.04	−.06	.79	.13
DERS35	.16	.01	−0.02	−.05	.64	−.11
DERS40	.00	.18	0.02	−.07	.61	−.09
DERS32	.17	−.03	−0.02	.07	.59	.02
DERS26	−.09	.21	−0.03	.43	.49	−.21
DERS41	.03	.20	0.19	−.09	.45	.02
DERS34	.34	.06	−0.08	−.07	.45	.08
DERS6	.08	.06	0.02	.01	−.10	.81
DERS5	.05	−.07	0.25	.04	−.16	.71
DERS10	−.03	.05	−0.12	−.06	.20	.69
DERS8	−.06	.07	−0.12	.32	.05	.59
DERS1	.03	.00	−0.13	.38	.10	.42

Note: Items loading on each factor are in boldface.

are things I can do to manage my emotions”) had a double loading on two factors (with loadings of .46 and .50 on factors 4 and 6, respectively).

After excluding these four items, the factor analysis was recomputed on the remaining 36 items to ensure that all had factor loadings of .40 or higher (see Table I for the final factor loadings).⁶ Upon extraction, the six factors accounted for 55.68% of the total variance of the measured variables (see Table II for the eigenvalues and percentage

⁶Because of limited space, communality estimates (i.e., the squared multiple correlation of each variable with the other variables in the analysis) for the 36 items included in the final factor analysis could not be published. These data are available upon request from the authors.

Table II. Eigenvalues and Percentage of Variance Accounted for by the Six Factors in the Final Factor Analysis ($N = 357$)

Factor	Initial eigenvalues		Extraction sums of squared loadings		Rotation sums of squared loadings
	Total	% Variance	Total	% Variance	Total
1	11.105	30.846	10.693	29.703	5.585
2	3.852	10.701	3.362	9.339	6.704
3	2.939	8.165	2.532	7.033	6.764
4	1.953	5.424	1.623	4.509	3.874
5	1.562	4.340	1.105	3.068	9.074
6	1.130	3.139	0.731	2.030	6.071

of variance accounted for by the six factors initially and upon extraction).

The six factors comprising the DERS are highly interpretable and reflect the multifaceted definition of emotion regulation on which the scale was based (see Table III). Factor 1 can be labeled Nonacceptance of Emotional Responses (NONACCEPTANCE). It is composed of items reflecting a tendency to have negative secondary emotional responses to one's negative emotions, or nonaccepting reactions to one's distress. Factor 2 can be labeled Difficulties Engaging in Goal-Directed Behavior (GOALS). It is composed of items reflecting difficulties concentrating and accomplishing tasks when experiencing negative emotions. Factor 3 can be labeled Impulse Control Difficulties (IMPULSE) and is composed primarily of items reflecting difficulties remaining in control of one's behavior when experiencing negative emotions. Factor 4 can be labeled Lack of Emotional Awareness (AWARENESS) and consists of items reflecting the tendency to attend to and acknowledge emotions. When these items are appropriately reverse-scored, this factor reflects an inattention to, and lack of awareness of, emotional responses. Factor 5 can be labeled Limited Access to Emotion Regulation Strategies (STRATEGIES) and consists of items reflecting the belief that there is little that can be done to regulate emotions effectively, once an individual is upset. Factor 6 can be labeled Lack of Emotional Clarity (CLARITY) and is composed of items reflecting the extent to which individuals know (and are clear about) the emotions they are experiencing. As expected, the six factors were correlated with one another (see Table IV).

Results suggest that the four proposed dimensions of emotion regulation on which the DERS is based may be more accurately conceptualized as six distinct (albeit related) dimensions. Although the NONACCEPTANCE and STRATEGIES factors mapped directly onto the proposed dimensions of emotional acceptance and access

to effective emotion regulation strategies, respectively, results suggest that the two other proposed dimensions of emotion regulation are themselves multidimensional. Items thought to reflect difficulties in the proposed dimension of awareness and understanding of emotions loaded onto two separate factors, AWARENESS and CLARITY, suggesting that there may be a difference between being aware of emotional responses and having a clear understanding of the nature of these responses. Similarly, items representing difficulties in the proposed dimension involving the ability to engage in goal-directed behavior and refrain from impulsive behavior when experiencing negative emotions were split into two separate factors, IMPULSE and GOALS, suggesting that there may be a difference between being able to inhibit undesired behavior and engage in desired behavior.

Mean scores for women and men on the overall DERS as well as each subscale are shown in Table V. Gender differences were found for only the AWARENESS subscale, on which men had significantly higher scores than women ($t = 3.5$, $p < .01$; for all other scales, $ts < 1.37$, $ps > .10$), suggesting that men reported lower emotional awareness than women.

Reliability

Internal Consistency. Cronbach's α was calculated to determine the internal consistency of the DERS items. Results indicate that the DERS had high internal consistency ($\alpha = .93$). Item-total correlations ranged from $r = .16$ to $r = .69$. Thirty-four of the items had item-total correlations above $r = .30$. All of the DERS subscales (computed from the 6 factors obtained in the factor analysis) also had adequate internal consistency, with Cronbach's $\alpha > .80$ for each subscale. See Table VI for additional information on the internal consistency of each subscale.

Table III. Items Composing the Six DERS Factors

Factor	Item
1: Nonacceptance of Emotional Responses (NONACCEPTANCE)	29) When I'm upset, I feel guilty for feeling that way. 25) When I'm upset, I feel ashamed with myself for feeling that way. 15) When I'm upset, I become embarrassed for feeling that way. 14) When I'm upset, I become angry with myself for feeling that way. 33) When I'm upset, I become irritated with myself for feeling that way. 27) When I'm upset, I feel like I am weak.
2: Difficulties Engaging in Goal-Directed Behavior (GOALS)	30) When I'm upset, I have difficulty concentrating. 22) When I'm upset, I have difficulty focusing on other things. 16) When I'm upset, I have difficulty getting work done. 38) When I'm upset, I have difficulty thinking about anything else. 24) When I'm upset, I can still get things done. (r)
3: Impulse Control Difficulties (IMPULSE)	37) When I'm upset, I lose control over my behaviors. 31) When I'm upset, I have difficulty controlling my behaviors. 17) When I'm upset, I become out of control. 23) When I'm upset, I feel out of control. 4) I experience my emotions as overwhelming and out of control.
4: Lack of Emotional Awareness (AWARENESS)	28) When I'm upset, I feel like I can remain in control of my behaviors. (r) 7) I am attentive to my feelings. (r) 3) I pay attention to how I feel. (r) 12) When I'm upset, I acknowledge my emotions. (r) 21) When I'm upset, I believe that my feelings are valid and important. (r) 9) I care about what I am feeling. (r)
5: Limited Access to Emotion Regulation Strategies (STRATEGIES)	39) When I'm upset, I take time to figure out what I'm really feeling. (r) 20) When I'm upset, I believe that I'll end up feeling very depressed. 19) When I'm upset, I believe that I will remain that way for a long time. 35) When I'm upset, I believe that wallowing in it is all I can do. 40) When I'm upset, it takes me a long time to feel better. 32) When I'm upset, I believe that there is nothing I can do to make myself feel better. 26) When I'm upset, I know that I can find a way to eventually feel better. (r) 41) When I'm upset, my emotions feel overwhelming.
6: Lack of Emotional Clarity (CLARITY)	34) When I'm upset, I start to feel very bad about myself. 6) I have difficulty making sense out of my feelings. 5) I have no idea how I am feeling. 10) I am confused about how I feel. 8) I know exactly how I am feeling. (r) 1) I am clear about my feelings. (r)

Note. (r) = reverse-scored item.

Validity

Construct Validity. To provide preliminary data on the construct validity of the DERS, correlations between the DERS scores (the overall score as well as the individual subscale scores) and a commonly used measure of emotion regulation, the NMR, were computed. Correlations were also computed between the DERS scores and measures of experiential avoidance and emotional expressivity. Since the DERS is based on a conceptualization of emotion regulation that distinguishes adaptive emotion regulation from emotional avoidance and expressive control, evidence for the construct validity of this measure of emotion dysregulation would be provided by positive correlations with experiential avoidance and

negative (rather than positive) correlations with emotional expressivity.

As shown in Table VII, all correlations between the overall DERS score and the constructs of interest were in the expected directions and statistically significant. Each of the DERS subscales was also significantly correlated (in the expected direction) with the NMR and the measure of experiential avoidance; however, only three of the subscales were significantly correlated with the measure of emotional expressivity. Supporting the validity of the factor solution, the DERS subscales showed a differential pattern of association with the constructs of interest. Consistent with the expectation that the STRATEGIES subscale would capture difficulties in the aspect of emotion regulation most commonly assessed in the

Table IV. Correlations Among Factors, Computed as Unweighted Sums of the Items Composing Each Scale ($N = 357$)

Factor	1	2	3	4	5	6
1	—					
2	.33**	—				
3	.39**	.50**	—			
4	.14**	.08	.22**	—		
5	.63**	.62**	.61**	.16**	—	
6	.44**	.32**	.39**	.46**	.49**	—

Note. Factor 1 = Nonacceptance of Emotional Responses (NONACCEPTANCE); Factor 2 = Difficulties Engaging in Goal-Directed Behavior (GOALS); Factor 3 = Impulse Control Difficulties (IMPULSE); Factor 4 = Lack of Emotional Awareness (AWARENESS); Factor 5 = Limited Access to Emotion Regulation Strategies (STRATEGIES); Factor 6 = Lack of Emotional Clarity (CLARITY).

** $p < .01$.

literature, the correlation between the STRATEGIES subscale and the extant measure of emotion regulation (the NMR) was significantly higher than the correlations between the NMR and any of the other DERS subscales (all $ts > 4.78$, $ps < .001$; see Cohen & Cohen, 1983, for the test of the significance of the difference between dependent rs). In addition, the correlation between the GOALS subscale and the NMR was significantly higher than the correlations between the NMR and the NONACCEPTANCE, AWARENESS, and CLARITY subscales (all $ts > 2.18$, $ps < .05$). The STRATEGIES subscale was also significantly more highly associated with the measure of experiential avoidance (the AAQ) than were the other DERS subscales (all $ts > 3.15$, $ps < .01$). As for the pattern of associations between the DERS subscales and the measure of emotional expressivity (the EES), only three of the subscales (AWARENESS, CLARITY, and NONACCEPTANCE) were significantly correlated with the EES. The AWARENESS subscale was significantly more highly correlated with EES scores than were any of the

other subscales (all $ts > 4.28$, $ps < .001$), and the CLARITY subscale was significantly more highly correlated with the EES than were the NONACCEPTANCE, GOALS, IMPULSE, and STRATEGIES subscales (all $ts > 2.02$, $ps < .05$).

To explore whether the DERS adds to the literature on the assessment of difficulties in emotion regulation by accounting for additional variance in constructs of interest above and beyond that accounted for by an extant measure of emotion regulation, partial correlations between the DERS overall and subscale scores and the constructs of interest were computed, controlling for the NMR. As shown in Table VII, all of the DERS variables accounted for a significant amount of additional variance in experiential avoidance, above and beyond that accounted for by the NMR. In addition, the AWARENESS, CLARITY, GOALS, and STRATEGIES subscales accounted for a significant amount of additional variance in emotional expressivity (although for the latter two subscales, the magnitude of the relationship was quite modest and the direction was reversed).

Predictive Validity. In order to begin to explore the predictive validity of the DERS (i.e., the extent to which it is associated with clinically relevant behavioral outcomes), correlations between the DERS scores and two clinically important behavioral outcomes thought to be associated with emotion dysregulation (frequency of deliberate self-harm and frequency of intimate partner abuse) were computed. Given gender differences in the severity and proposed function of partner abuse (see Saunders, 1986; Stets & Straus, 1990), as well as increasing evidence of gender differences in the risk factors for self-harm (see Gratz, 2003; Gratz, Conrad, & Roemer, 2002), the relationships between difficulties in emotion regulation and these outcome variables were examined separately for women and men. A history of at least one incident of self-harm was reported by 35% of the women and 44% of the men (with more than 10 incidents reported by 15% of the women and 14% of the men). A history of at least one act of intimate partner abuse was reported by 24% of the women and 17% of the men (with 12% of the women and 8% of the men reporting more than three acts of abuse in the past). These rates are consistent with past studies on these behaviors among other samples from this urban university (see Gratz et al., 2002; Lisak, Hopper, & Song, 1996). Rates of self-harm and partner abuse did not differ significantly across gender ($\chi^2 = 2.62$ for self-harm and $\chi^2 = 2.10$ for partner abuse; $ps > .10$).

Before conducting analyses, logarithms were used to transform the DSHI and PH frequency scores, as the raw frequency scores of both measures were highly positively

Table V. Means and Standard Deviations for DERS Scales Among Women ($n = 260$) and Men ($n = 97$)

Scale	Women		Men	
	Mean	SD	Mean	SD
DERS Overall	77.99	20.72	80.66	18.79
NONACCEPTANCE	11.65	4.72	11.55	4.20
GOALS	14.41	4.95	14.34	5.16
IMPULSE	10.82	4.41	11.55	4.59
AWARENESS	14.34	4.60	16.26	4.61
STRATEGIES	16.16	6.19	16.23	6.26
CLARITY	10.61	3.80	10.74	3.67

Table VI. Internal Consistency Reliability Analyses for DERS Subscales ($N = 357$)

Subscale	No. of items	Cronbach's alpha	Range of item-total correlations	Range of interitem correlations	Mean interitem correlation
NONACCEPTANCE	6	.85	.52-.71	.33-.67	.50
GOALS	5	.89	.59-.81	.47-.75	.62
IMPULSE	6	.86	.45-.76	.31-.73	.52
AWARENESS	6	.80	.49-.67	.29-.64	.40
STRATEGIES	8	.88	.46-.75	.27-.69	.47
CLARITY	5	.84	.56-.71	.39-.67	.51

skewed (as would be expected when assessing these constructs). Following transformations, both variables approximated normal distributions among female participants. Although the transformed DSHI scores approximated a normal distribution among male participants, their PH scores remained positively skewed and kurtotic (skewness = 2.73, kurtosis = 7.63). However, Kline (1998) reviewed Monte Carlo studies that indicate that nonnormality is not problematic unless skewness >3 and kurtosis >10; therefore, analyses were conducted using these transformed variables for women and men.

As shown in Table VIII, the correlations between the overall DERS score and self-harm were significant (and in the expected direction) among both women and men, and the correlation between the overall DERS score and intimate partner abuse (also in the expected direction) was significant among men. The overall DERS score was significantly more highly correlated with frequency of partner abuse among men than among women ($z = 2.26, p < .05$;

see Cohen & Cohen, 1983, for a test of the significance of the difference between independent r s), consistent with the emphasis in the literature on the emotion regulatory function of partner abuse among men in particular.

Providing support for the validity of the factor solution, the DERS subscales showed a differential pattern of association with self-harm and intimate partner abuse, within and across gender. Frequency of self-harm was significantly associated with the NONACCEPTANCE and IMPULSE subscales among men, but not among women (for whom correlations with the other four subscales were significant). However, none of the correlations between frequency of self-harm behavior and the DERS subscales differed significantly from one another among women or men, and none differed significantly across gender.

As for the relationships between different aspects of emotion regulation and intimate partner abuse, frequency of partner abuse was significantly associated with only the IMPULSE subscale among women, and with the GOALS,

Table VII. Correlations and Partial Correlations Among DERS Scales and Constructs of Interest ($N = 357$)

Scale	NMR ($N = 348$)	Experiential avoidance	Emotional expressivity
DERS Overall	-.69**	.60**	-.23**
Controlling for NMR ^a		.33**	-.09
NONACCEPTANCE	-.42**	.39**	-.14**
Controlling for NMR ^a		.18**	-.05
GOALS	-.53**	.44**	-.04
Controlling for NMR ^a		.19**	.11*
IMPULSE	-.46**	.41**	-.04
Controlling for NMR ^a		.18**	.09
AWARENESS	-.34**	.32**	-.46**
Controlling for NMR ^a		.14**	-.42**
STRATEGIES	-.69**	.56**	-.10
Controlling for NMR ^a		.28**	.11*
CLARITY	-.39**	.38**	-.25**
Controlling for NMR ^a		.20**	-.18**

Note. NMR = Generalized Expectancy for Negative Mood Regulation Scale.

^a $N = 348$.

* $p < .05$. ** $p < .01$.

Table VIII. Correlations and Partial Correlations Among DERS Scales and Clinical Outcome Variables of Frequency of Self-Harm and Intimate Partner Abuse Among Women and Men

Scale	Self-harm		Intimate partner abuse	
	Women (<i>N</i> = 260)	Men (<i>N</i> = 97)	Women (<i>N</i> = 256)	Men (<i>N</i> = 96)
DERS Overall	.20**	.26*	.08	.34**
Controlling for NMR	.02 ^a	.16	.11 ^{b†}	.25*
NONACCEPTANCE	.11 [†]	.28**	.04	.18 [†]
Controlling for NMR	-.00 ^a	.21*	.05 ^b	.09
GOALS	.13*	.13	.03	.37**
Controlling for NMR	-.01 ^a	.02	.04 ^b	.30**
IMPULSE	.11 [†]	.24*	.19**	.29**
Controlling for NMR	-.01 ^a	.16	.22 ^{b**}	.20 [†]
AWARENESS	.13*	.07	-.02	.10
Controlling for NMR	.02 ^a	.04	-.02 ^b	.06
STRATEGIES	.20**	.16	.05	.24*
Controlling for NMR	.03 ^a	.02	.07 ^b	.10
CLARITY	.16*	.16	.06	.13
Controlling for NMR	.05 ^a	.12	.06 ^b	.08

Note. NMR = Generalized Expectancy for Negative Mood Regulation Scale.

^a*N* = 251.

^b*N* = 247.

[†]*p* < .10. **p* < .05. ***p* < .01.

IMPULSE, and STRATEGIES subscales among men. For women, the correlation between the IMPULSE subscale and frequency of partner abuse was significantly higher than the correlations between the NONACCEPTANCE, GOALS, AWARENESS, and STRATEGIES subscales and frequency of partner abuse (*ts* > 2.16, *ps* < .05). Among men, the correlation between the GOALS subscale and frequency of partner abuse was significantly higher than the correlations between the AWARENESS and CLARITY subscales and frequency of partner abuse (*ts* > 2.00, *ps* < .05). The GOALS subscale also was significantly more highly correlated with frequency of partner abuse among men than among women (*z* = 2.96, *p* < .01). These findings support the proposed association between difficulties in emotion regulation and partner abuse among men, and suggest that for women this relationship may exist only for the specific dimension of difficulties controlling one's behavior when distressed.

To explore whether the DERS explains additional variance in these clinical outcomes above and beyond that accounted for by an extant measure of emotion regulation, partial correlations between the DERS overall and subscale scores and these behavioral outcome measures were computed, controlling for the NMR. As shown in Table VIII, there is some evidence that the DERS accounts for unique variance in clinically relevant behaviors, when controlling for that accounted for by the NMR. Specifically, the NONACCEPTANCE subscale accounted for a significant amount of additional variance in

frequency of self-harm among men, whereas the GOALS subscale accounted for a significant amount of additional variance in frequency of partner abuse among men. In addition, the IMPULSE subscale explained a significant amount of additional variance in frequency of partner abuse among women. When controlling for the NMR, the overall DERS score explained a significant amount of the variance in frequency of partner abuse among men.

STUDY 2

Method

Participants and Procedure

In order to assess the test-retest reliability of the DERS, a second sample was obtained. As part of a larger, unrelated study, 194 participants were recruited from tables located in public areas on the University of Massachusetts Boston campus to complete a questionnaire packet that included the DERS (in addition to other measures for the unrelated study). Of these participants, 21 agreed to complete the DERS again 4–8 weeks later, in exchange for a small monetary compensation. This subset of participants ranged in age from 18 to 48 years, with a mean age of 25.95 (*SD* = 8.94). Sixty-two percent of these participants were female. In regard to the racial/ethnic background of these participants, 67% were White, 24% were

Black/African American, 5% were Asian/Pacific Islander, and 5% were of an unspecified racial/ethnic background. This sample completed only the DERS, and not the other measures described earlier.

Results

For the 21 participants in the test–retest sample, intraclass correlation coefficients were computed for scores on the first and second administration of the DERS in order to determine the test–retest reliability of the DERS scores. Results indicate that the overall DERS score had good test–retest reliability over a period ranging from 4 to 8 weeks ($\rho_I = .88$, $p < .01$). The test–retest reliability of the DERS subscales was adequate (ρ_I s = .69 for NONACCEPTANCE, .69 for GOALS, .57 for IMPULSE, .68 for AWARENESS, .89 for STRATEGIES, and .80 for CLARITY; all p s < .01).

GENERAL DISCUSSION

The results of these studies contribute to and expand upon literature on the conceptualization of emotion regulation and provide preliminary support for the DERS as a measure of difficulties in emotion regulation. Results suggest the presence of six separate (albeit related) dimensions of emotion regulation wherein difficulties may occur, including (a) lack of awareness of emotional responses, (b) lack of clarity of emotional responses, (c) nonacceptance of emotional responses, (d) limited access to emotion regulation strategies perceived as effective, (e) difficulties controlling impulses when experiencing negative emotions, and (f) difficulties engaging in goal-directed behaviors when experiencing negative emotions. These findings suggest the importance of distinguishing between the awareness and understanding of emotional responses, as well as between the ability to act in desired ways and refrain from acting in undesired ways when experiencing negative emotions.

Findings provide empirical support for a multidimensional conceptualization of emotion regulation. Correlations of the DERS variables with several clinically relevant constructs revealed a differential pattern of associations amongst the different DERS subscales, with certain subscales showing stronger relationships with particular constructs and/or behavioral outcomes than others. Significant associations between DERS subscales assessing deficits in awareness, understanding, and acceptance of emotions and the clinically relevant constructs of emotional avoidance and expressivity support the comprehensive conceptualization of emotion regulation on which the DERS is based. Furthermore, the significant relationships between

these subscales and the behavioral outcome of self-harm among both women and men (specifically, the AWARENESS and CLARITY subscales among women and the NONACCEPTANCE subscale among men) suggest their clinical relevance. Findings that the subscales focusing on difficulties controlling behavior when emotion is present (i.e., GOALS and IMPULSE), rather than on difficulties controlling emotion, were significantly related to clinical outcomes suggest the usefulness of considering the impact of these particular dimensions within the clinical realm.

Although the DERS and its subscales accounted for additional variance in clinical constructs and behavioral outcomes above and beyond that accounted for by the NMR, many of the relationships between the DERS scales and the behavioral outcomes did not remain statistically significant after controlling for the NMR. This is likely due to the rather high correlations between the NMR and some of the DERS subscales, suggesting that despite the NMR's theoretical emphasis on emotional avoidance and inclusion of emotional control items, there is some overlap between the DERS and NMR. Nevertheless, the fact that some unique relationships remained between the DERS and behavioral outcomes after controlling for the NMR suggests that the NMR does not capture all clinically relevant aspects of emotion regulation. It will be important to continue to investigate the clinical utility of the DERS in explaining a broad range of behavioral outcomes.

Despite preliminary findings that the DERS has high internal consistency, good test–retest reliability, and adequate construct and predictive validity, the present studies have limitations that should be addressed in future research. One limitation is that the test–retest reliability results are based on a small sample size ($N = 21$), thus requiring replication with a larger sample. Another limitation is the reliance on a few select self-report measures of emotional responding to provide data on the construct validity of the DERS. As a result, the relationships between the DERS and other aspects of emotional responding remain to be determined. Moreover, the reliance on only *self-reported* emotional responding is limiting, as it is likely that some individuals do not have full awareness of their emotional responses, thereby reducing the extent to which they can accurately report on those responses.

Despite the comprehensive nature of the DERS, omitted constructs should be noted. DERS items focus primarily on the regulation of negative emotional states (i.e., many items begin with the phrase “When I’m upset”), as difficulties in this domain are likely to have the most clinical relevance. Future research may want to incorporate items assessing difficulties with the regulation of positive emotional states as well. Also, although results support the clinical utility of the NONACCEPTANCE subscale, it

is important to note that the items included in this subscale assess only one aspect of the nonacceptance of emotional responses, secondary emotional reactions to one's negative emotions. This form of emotional nonacceptance was emphasized due to its clinical relevance and proposed association with negative emotional and behavioral consequences (see Greenberg & Paivio, 1997); however, future research on scale development should include items assessing other aspects of emotional nonacceptance.

The extent to which the results of this study can be generalized to men or individuals from diverse ethnic/racial backgrounds remains an empirical question. Although the sample comes from a diverse urban university that draws heavily from the community and attracts a large number of older, nontraditional college students, the majority of the participants were White women. Given evidence of the role of gender socialization and culture in emotional appraisal and expression (see Kitayama & Markus, 1997; Manstead, 1992), it is possible that the factor structure of emotion regulation and/or the relationships of these factors to clinical constructs differs as a function of gender or cultural background. It is also important to note that the validity of the DERS for a clinical population has yet to be determined (see Haynes, Richard, & Kubany, 1995).

Given the preliminary nature of this study, replication of the results with different samples, under different circumstances (e.g., different assessment procedures), and across different functions is necessary to ensure the robustness and generalizability of the findings (Haynes et al., 1995). Examination of the psychometric properties and factor structure of the DERS among diverse nonclinical populations, as well as relevant clinical populations (such as individuals with borderline personality disorder; see Linehan, 1993), is necessary. Future research on the validity of the DERS should examine its relationships with a broader range of self-report measures of emotional responding (such as the TMMS and other measures of emotional awareness and understanding), as well as assessments of emotional responding in other domains (e.g., physiological responding, the coding of facial expressivity). Further research is also needed to examine the discriminant validity of the DERS, especially with respect to other measures of general distress or psychopathology, such as anxiety and depression.

Further research is needed on the predictive validity of the DERS as well. The behavioral outcomes of self-harm and intimate partner abuse were chosen to provide preliminary data in this area in part because of the theoretical support for the role of emotion dysregulation in both behaviors, and in part because of their interest to these authors. There are many other clinically relevant behaviors and constructs that are also thought to be asso-

ciated with deficits in emotion regulation, including post-traumatic stress disorder and generalized anxiety disorder, and future research on the relationships between the DERS subscales and these clinical outcomes is needed. Research exploring the differential role of the various dimensions of emotion dysregulation in clinical problems will be especially important, as it may suggest specific targets for intervention.

ACKNOWLEDGMENTS

This research was supported in part by a grant to the first author from the Office of Research and Sponsored Programs at the University of Massachusetts Boston. The authors wish to thank Matthew Tull, Amy Wagner, and two anonymous reviewers for their helpful comments on earlier versions of the measure and/or previous drafts of this manuscript.

REFERENCES

- Briere, J., & Gil, E. (1998). Self-mutilation in clinical and general population samples: Prevalence, correlates, and functions. *American Journal of Orthopsychiatry*, 68, 609–620.
- Bushman, B. J., Baumeister, R. F., & Phillips, C. M. (2001). Do people agree to improve their mood? Catharsis beliefs, affect regulation opportunity, and aggressive responding. *Journal of Personality and Social Psychology*, 81, 17–32.
- Catanzaro, S. J., & Mearns, J. (1990). Measuring generalized expectancies for negative mood regulation: Initial scale development and implications. *Journal of Personality Assessment*, 54, 546–563.
- Cloitre, M. (1998). Sexual revictimization: Risk factors and prevention. In V. M. Follette, J. I. Ruzek, & F. R. Abueg (Eds.), *Cognitive-behavioral therapies for trauma* (pp. 278–304). New York: Guilford Press.
- Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Cole, P. M., Michel, M. K., & Teti, L. O. (1994). The development of emotion regulation and dysregulation: A clinical perspective. In N. A. Fox (Ed.), *The development of emotion regulation: Biological and behavioral considerations. Monographs of the Society for Research in Child Development*, 59 (Serial No. 240), 73–100.
- Cortez, V. L., & Bugental, D. B. (1994). Children's visual avoidance of threat: A strategy associated with low social control. *Merrill-Palmer Quarterly*, 40, 82–97.
- Eisenberg, N., Cumberland, A., & Spinrad, T. L. (1998). Parental socialization of emotion. *Psychological Inquiry*, 9, 241–273.
- Flett, G. L., Blankstein, K. R., & Obertynski, M. (1996). Affect intensity, coping styles, mood regulation expectancies, and depressive symptoms. *Personality and Individual Differences*, 20, 221–228.
- Floyd, F. J., & Widaman, K. F. (1995). Factor analysis in the development and refinement of clinical assessment instruments. *Psychological Assessment*, 7, 286–299.
- Garner, P. W., & Spears, F. M. (2000). Emotion regulation in low-income preschoolers. *Social Development*, 9, 246–264.
- Gratz, K. L. (2001). Measurement of deliberate self-harm: Preliminary data on the Deliberate Self-Harm Inventory. *Journal of Psychopathology and Behavioral Assessment*, 23, 253–263.
- Gratz, K. L. (2003). Risk factors for and functions of deliberate self-harm: An empirical and conceptual review. *Clinical Psychology: Science and Practice*, 10, 192–205.

- Gratz, K. L., Conrad, S. D., & Roemer, L. (2002). Risk factors for deliberate self-harm among college students. *American Journal of Orthopsychiatry*, 72, 128–140.
- Greenberg, L. S., & Paivio, S. C. (1997). *Working with emotions in psychotherapy*. New York: The Guilford Press.
- Gross, J. J., & Levenson, R. W. (1997). Hiding feelings: The acute effects of inhibiting negative and positive emotion. *Journal of Abnormal Psychology*, 106, 95–103.
- Gross, J. J., & Munoz, R. F. (1995). Emotion regulation and mental health. *Clinical Psychology: Science and Practice*, 2, 151–164.
- Hayes, S. C., Strosahl, K. D., Wilson, K. G., Bissett, R. T., Pistorello, J., Toarmino, D. et al. (in press). Measuring experimental avoidance: A preliminary test of a working model. *The Psychological Record*.
- Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). The ACT model of psychopathology and human suffering. In *Acceptance and commitment therapy: An experiential approach to behavior change* (pp. 49–80). New York: Guilford Press.
- Hayes, S. C., Wilson, K. G., Gifford, E. V., Follette, V. M., & Strosahl, K. (1996). Experiential avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology*, 64, 1152–1168.
- Haynes, S. N., Richard, D. C. S., & Kubany, E. S. (1995). Content validity in psychological assessment: A functional approach to concepts and methods. *Psychological Assessment*, 7, 238–247.
- Jakupcak, M., Lisak, D., & Roemer, L. (2002). The role of masculine ideology and masculine gender role stress in men's perpetration of aggression and violence in relationships. *Psychology of Men and Masculinity*, 3, 97–106.
- Kendall, M. G., & Stuart, A. (1958). *The advanced theory of statistics*. New York: Hafner.
- Kitayama, S., & Markus, H. R. (1997). *Emotion and culture: Empirical studies of mutual influence*. Washington, DC: American Psychological Association.
- Kline, R. B. (1998). *Principles and practices of structural equation modeling*. New York: Guilford Press.
- Kopp, C. B. (1989). Regulation of distress and negative emotions: A developmental view. *Developmental Psychology*, 25, 343–354.
- Kring, A. M., Smith, D. A., & Neale, J. M. (1994). Individual differences in dispositional expressiveness: The development and validation of the Emotional Expressivity Scale. *Journal of Personality and Social Psychology*, 66, 934–949.
- Linehan, M. M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. New York: The Guilford Press.
- Lisak, D., Conklin, A., Hopper, J., Miller, P., Altschuler, L., & Smith, B. (2000). The Abuse-Perpetration Inventory: Development of an assessment instrument for research on the cycle of violence. *Family Violence and Sexual Assault Bulletin*, 21–30.
- Lisak, D., Hopper, J., & Song, P. (1996). Factors in the cycle of violence: Gender rigidity and emotional constriction. *Journal of Traumatic Stress*, 9, 735–757.
- Manstead, A. S. R. (1992). Gender differences in emotion. In A. Gale and M. W. Eysenck (Eds.), *Handbook of individual differences: Biological Perspectives* (pp. 355–387). Chichester, England: Wiley.
- Melnick, S. M., & Hinshaw, S. P. (2000). Emotion regulation and parenting in AD/HD and comparison boys: Linkages with social behaviors and peer preference. *Journal of Abnormal Child Psychology*, 28, 73–86.
- Mennin, D. S., Heimberg, R. G., Turk, C. L., & Fresco, D. M. (2002). Applying an emotion regulation framework to integrative approaches to generalized anxiety disorder. *Clinical Psychology: Science and Practice*, 9, 85–90.
- Notarius, C. I., & Levenson, R. W. (1979). Expressive tendencies and physiological response to stress. *Journal of Personality and Social Psychology*, 37, 1204–1210.
- Paivio, S. C., & Greenberg, L. S. (1998). Experiential theory of emotion applied to anxiety and depression. In W. F. Flack Jr. & J. D. Laird (Eds.), *Emotions in psychopathology: Theory and research* (pp. 229–242). New York: Oxford University Press.
- Saarni, C. (1999). *The development of emotional competence*. New York: Guilford Press.
- Salovey, P., Mayer, J. D., Goldman, S. L., Turvey, C., & Palfai, T. P. (1995). Emotional attention, clarity and repair: Exploring emotional intelligence using the trait meta-mood scale. In J. W. Pennebaker (Ed.), *Emotion, disclosure, and health* (pp. 125–154). Washington, DC: APA Books.
- Saunders, D. G. (1986). When battered women use violence: Husband abuse or self-defense? *Violence and Victims*, 1, 47–60.
- Stets, J., & Straus, M. A. (1990). Gender differences in reporting marital violence and its medical and psychological consequences. In M. A. Straus, & R. J. Gelles (Eds.), *Physical violence in American families: Risk factors and adaptations in American families* (pp. 151–166). New Brunswick, NJ: Transaction Books.
- Stewart, S. H., Zvolensky, M. J., & Eifert, G. H. (2002). The relations of anxiety sensitivity, experiential avoidance, and alexithymic coping to young adults' motivations for drinking. *Behavior Modification*, 26, 274–296.
- Thompson, R. A. (1994). Emotion regulation: A theme in search of definition. In N. A. Fox (Ed.), *The development of emotion regulation: Biological and behavioral considerations. Monographs of the Society for Research in Child Development*, 59 (Serial No. 240), 25–52.
- Thompson, R. A., & Calkins, S. D. (1996). The double-edged sword: Emotional regulation for children at risk. *Development and Psychopathology*, 8, 163–182.
- Zeman, J., & Garber, J. (1996). Display rules for anger, sadness, and pain: It depends on who is watching. *Child Development*, 67, 957–973.

DERS

Please indicate how often the following statements apply to you by writing the appropriate number from the scale below on the line beside each item:

1-----	2-----	3-----	4-----	5-----
almost never (0-10%)	sometimes (11-35%)	about half the time (36-65%)	most of the time (66-90%)	almost always (91-100%)

- _____ 1) I am clear about my feelings.
- _____ 2) I pay attention to how I feel.
- _____ 3) I experience my emotions as overwhelming and out of control.
- _____ 4) I have no idea how I am feeling.
- _____ 5) I have difficulty making sense out of my feelings.
- _____ 6) I am attentive to my feelings.
- _____ 7) I know exactly how I am feeling.
- _____ 8) I care about what I am feeling.
- _____ 9) I am confused about how I feel.
- _____ 10) When I'm upset, I acknowledge my emotions.
- _____ 11) When I'm upset, I become angry with myself for feeling that way.
- _____ 12) When I'm upset, I become embarrassed for feeling that way.
- _____ 13) When I'm upset, I have difficulty getting work done.
- _____ 14) When I'm upset, I become out of control.
- _____ 15) When I'm upset, I believe that I will remain that way for a long time.
- _____ 16) When I'm upset, I believe that I'll end up feeling very depressed.
- _____ 17) When I'm upset, I believe that my feelings are valid and important.
- _____ 18) When I'm upset, I have difficulty focusing on other things.
- _____ 19) When I'm upset, I feel out of control.
- _____ 20) When I'm upset, I can still get things done.
- _____ 21) When I'm upset, I feel ashamed with myself for feeling that way.

1-----	2-----	3-----	4-----	5-----
almost never	sometimes	about half the time	most of the time	almost always
(0-10%)	(11-35%)	(36-65%)	(66-90%)	(91-100%)

_____ 22) When I'm upset, I know that I can find a way to eventually feel better.

_____ 23) When I'm upset, I feel like I am weak.

_____ 24) When I'm upset, I feel like I can remain in control of my behaviors.

_____ 25) When I'm upset, I feel guilty for feeling that way.

_____ 26) When I'm upset, I have difficulty concentrating.

_____ 27) When I'm upset, I have difficulty controlling my behaviors.

_____ 28) When I'm upset, I believe that there is nothing I can do to make myself feel better.

_____ 29) When I'm upset, I become irritated with myself for feeling that way.

_____ 30) When I'm upset, I start to feel very bad about myself.

_____ 31) When I'm upset, I believe that wallowing in it is all I can do.

_____ 32) When I'm upset, I lose control over my behaviors.

_____ 33) When I'm upset, I have difficulty thinking about anything else.

_____ 34) When I'm upset, I take time to figure out what I'm really feeling.

_____ 35) When I'm upset, it takes me a long time to feel better.

_____ 36) When I'm upset, my emotions feel overwhelming.