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Construct validity and factor structure of the difficulties in Emotion Regulation Scale among adults with severe mental illness

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ABSTRACT

Background: The Difficulties in Emotion Regulation Scale (DERS: Gratz and Roemer, 2004) is a measure of emotion-regulation capacities with good construct validity, test–retest reliability and internal consistency. Factor analytic studies have produced mixed results, with the majority of studies supporting the original 6-factor model while several studies advance alternative 5-factor models, each of which raises questions about the psychometric validity of the Lack of Emotional Awareness factor. A limitation of prior psychometric studies on the DERS is the reliance on healthy subjects with minimal impairment in emotion regulation. The current study assesses the construct validity and latent factor structure of the DERS in a large sample of adult psychiatric inpatients with serious mental illness (SMI).

Methods: Inpatients with SMI ($N = 592$) completed the DERS, Acceptance and Action Questionnaire (AAQ-2), Patient Health Questionnaire (PHQ-SADS), and research diagnostic interviews (SCID I/II) at admission.

Results: DERS total scores were correlated with AAQ-2 ($r = .70$), PHQ-Depression ($r = .45$), PHQ-Anxiety ($r = .44$) and moderately correlated with PHQ-Somatization ($r = .28$). Confirmatory factor analysis indicated that five and six-factor model produced equivalent fit indices. All factors demonstrated positive correlations with the exception of difficulty engaging in goal-directed behavior and lack of emotional awareness.

Conclusions: The DERS is a strong measure with excellent internal consistency and good construct validity. Caution is warranted in discarding the six-factor model given the equivalence with the five-factor model, particularly in light of the body of clinical research evidence utilizing the full scale.

1. Introduction

Impairments in emotion regulation are pervasive among individuals with serious mental illness (SMI). Such impairments contribute to hospitalization because damaging impulsive behavior frequently necessitates protective care. Counterproductive and potentially dangerous concomitants of dysregulated emotion include anger outbursts, disordered eating, substance abuse, non-suicidal self-injury, and suicide attempts. Accordingly, research has emerged in recent years linking maladaptive emotion-regulation strategies to various forms of physical and emotional impairments (Aldao and Nolen-Hoeksema, 2010a,b; Aldao and Nolen-Hoeksema, 2012). A popular measure of emotion regulation used in clinical and academic settings is the Difficulties in Emotion Regulation Scale (DERS: Gratz and Roemer, 2004). Despite its popularity and strong concurrent and predictive validity, there is a relative dearth of psychometric results from psychiatric populations with serious mental illness. This gap in the literature is particularly problematic given the fact that the DERS is used extensively in psychiatric research as a predictor of psychopathology, in treatment trials as a mediator variable, and as a primary outcome variable. The current study addresses this gap by

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investigating the construct validity and latent factor structure of the DERS in a large adult inpatient sample with a high burden of illness and SMI.[1]

Adults who are unable to down-regulate emotions in reaction to stressful life events are likely to experience prolonged severe distress that may manifest in diagnosable depression and/or anxiety (Nolen-Hoeksema et al., 2007; Mennin et al., 2007) and other forms of psychopathology. In the past decade research linking impairment in emotion regulation with specific disorders include borderline personality disorder (Gratz et al., 2006), mood disorders (Campbell-Sills et al., 2006), alcohol abuse (Baker et al., 2004; Sher and Grekin, 2007) substance abuse (Fox et al., 2007, 2008; Gratz and Tull, 2010), and generalized anxiety disorder (Roemer et al., 2009). A recent study found that the relationship between emotion-regulation skills and severity of psychological symptoms was completely mediated by the ability to modify negative emotions (Berking et al., 2012). A second study found that impaired emotion-regulation capacities fully mediated the relationship between interpersonal stress and depression (Moriya and Takahashi, 2012). Recent evidence indicates that improvement in DERS scores (particularly improvements in DERS difficulties with impulse control and goal-directed behaviors subscales) partially mediated the incidence and frequency of non-suicidal self-injury during and after cognitive behavioral therapy (Slee et al., 2008). This evidence adds to a growing body of research indicating the importance of improved emotion regulation in mediating treatment outcomes (Axelrod et al., 2011; Berking et al., 2011, 2012; Diener et al., 2007; Gratz and Gunderson, 2006; Mazaheri et al., 2013).

Gratz and Roemer (2004) developed the 36-item Difficulty in Emotion Regulation Scale (DERS) demonstrating good internal consistency (Cronbach's α from .80 to .89), test–retest reliability ($r = .88$), and construct validity. Exploratory factor analysis of 357 undergraduate college students indicated that six dimensions best represented the factor structure: 1. Nonacceptance of emotional responses (NER), 2. Difficulty engaging in goal-directed behavior when experiencing negative emotions (DEG), 3. Impulse control difficulties when experiencing negative emotions (ICD), 4. Lack of emotional awareness (LEA), 5. Limited access to emotion regulation strategies (LAS), and 6. Lack of emotional clarity (LEC). Subsequent confirmatory factor analytic studies utilized large samples of non-clinical adults and adolescents finding equivocal results. For example, Neumann and colleagues (using the Dutch translation) found evidence confirming the original 6 factor model utilizing a sample of 870 non-clinical adolescent subjects (Neumann et al., 2010). Similarly, an Italian version of the DERS utilizing 323 students found evidence supporting the six factor model (Giromini et al., 2012). Yet, in a sample of 1045 undergraduate females, Bardeen (Bardeen et al., 2012) found the Awareness dimension did not represent the same higher-order emotion-regulation construct as the other dimensions. Notably the proposed first-order five-factor model in the Bardeen study (excluding the dimension of Awareness) was considered more parsimonious than the original six-factor model. Significant limitations of the above studies were the restricted range of DERS scores and lack of demonstrable psychopathology in the samples; furthermore, the Bardeen study excluded male subjects, thus limiting generalizability.

The single exception to the utilization of non-clinical sample was a study of 218 adolescents with serious mental illness undergoing psychiatric treatment (Perez et al., 2012). The authors confirmed the original 6-factor model and determined that the DERS Strategies factor provided moderately good sensitivity and specificity for identifying cases of non-suicidal self-injury (cutoff score of 21.5 provided optimal sensitivity and specificity balance in discriminating individuals with a lifetime history of self-harm). The current study addresses this gap in the adult literature by assessing the construct validity and latent factor structure of the DERS in a large sample of adult psychiatric inpatients with multiple co-occurring psychiatric disorders, significant burden of illness, and impairment in daily functioning. Measures of experiential avoidance, depression, anxiety, and somatization were correlated with DERS total score. Confirmatory factor analyses examined 5 and 6-factor models reported in the literature. Based on prior research we hypothesized: 1. Construct validity would be supported by the AAQ-2 correlation with DERS total score, 2. Confirmatory factor analysis would support a 6-factor model.

2. Methods

2.1. Participants

There were no exclusion criteria for the current study and no patients declined participation. Participants were all 592 individuals consecutively admitted to a specialized psychiatric hospital (July 2012–August 2013) with an average length of hospitalization of 48 days (SD = 20.3). Gender distribution was relatively even: 301 were women (51%) and 292 were men (49%). Average age was 36.2 years (SD = 14.9). Participants were Caucasian (91.3%), multiracial (5.4%), African American (1.5%), Asian (1.2%), American Indian (.2%) and Pacific Islander (.2%). Thirty-seven patients identified as being of Hispanic or Latino ethnicity (6.2%). Education level was above the national average with 89% indicating some college experience. A majority (63%) of participants were not working in the 30 days prior to admission.

2.2. Procedures

Data were collected as part of the hospital's Adult Outcomes Project to assess treatment response (Allen et al., 2009). All measures used in the current study were collected within 72 h of admission and were part of a larger battery of assessments. Assessments were conducted via a hospital-wide web survey on laptop computers. This project was a clinical outcomes project, conducted with all patients. All assessments were designed and implemented as an element of routine clinical care and integrated into treatment planning and monitoring of progress, thus no patients declined participation. Patients and their treatment teams were provided with profile scores and feedback regarding diagnostic findings. In addition, they were informed that the findings were used to evaluate the effectiveness of treatment and for research purposes. Use of the project's data was approved by Baylor College of Medicine's Institutional Review Board (IRB).

2.3. Measures

Demographic variables and history of psychiatric hospitalization and psychiatric service usage were assessed using a standardized patient information survey (Fowler and Allen, 2013). The Difficulties in Emotion Regulation Scale (Gratz and Roemer, 2004) is a 36-item self-report measure assessing difficulties in emotion regulation. Items are rated on a 5-point scale with ordinal response options, ranging from 1 (almost never, 0–10%) to 5 (almost always,

[1] Kessler defines SMI as meeting one or more of the following criteria during the past 12 months: one or more DSM-IV/CIDI mental disorders, suicide attempt with serious lethality of intent, work disability, or substantial limitation as the result of a mental disorder, bipolar I disorder, a behavioral disorder with associated serious violence or criminal behavior, or any disorder that resulted in 30+ days out of role in the year (Kessler et al., 2010).