The cognitive emotion regulation questionnaire: Factorial, convergent, and criterion validity analyses of the full and short versions

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A B S T R A C T

Aim: Emotion regulation (ER) theories and measurement scales have received considerable attention in clinical and research settings. However, there is a need for independent validation of these scales to ensure rigor within this field. The aim of the current study was to examine the factorial, convergent, and criterion validity of one of the most popular measures of ER, the Cognitive Emotion Regulations Questionnaire (CERQ), both short and long form.

Methods: The CERQ (and CERQ-short), positive and negative affect schedule, and difficulties in emotion regulation scale were administered to 795 participants (70% female, M age = 36.36).

Results: Confirmatory factor analysis supported the 9-factor structure of the CERQ-short, but not the full CERQ. Adequate fit for the full CERQ was achieved after the removal of three poorly performing items. Correlations supported the convergent and criterion validity of both scales, although the CERQ-short demonstrated weaker associations than the full scale.

Conclusions: The factorial, convergent, and criterion validity of the CERQ and CERQ-short were generally supported. However, future research may wish to examine several high inter-factor correlations that were observed among the full CERQ, as well as the weaker validity demonstrated by the CERQ-short.

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1. Introduction

Theories of emotion regulation have become increasingly popular and useful in modern accounts of psychological functioning and psychopathology. Emotion regulation has been defined as the (conscious or unconscious) processes of monitoring, evaluating, and modulating emotional experiences in goal-directed ways (Thompson, 1994). Broadly speaking, the goals of this control process relate to which emotions are experienced, when and how they are experienced, and how they are expressed (Gross, 1998).

A broad range of behavioral and cognitive strategies can be employed to achieve these regulatory goals. However, different strategies have different implications for adaptive functioning (John & Gross, 2004). Importantly, individuals who fail to regulate their emotions, or who use ineffective or maladaptive strategies, are at greater risk of suffering emotional disorders (Aldao & Nolen-Hoeksema, 2010). In fact, emotion dysregulation has received attention as a transdiagnostic risk factor implicated in a range of psychological disorders (Kring & Sloan, 2009).

Of particular clinical interest are the ways in which people regulate and adapt to stressful or negative emotional states. To facilitate research into these issues, Garnefski, Kraaij, and Spinhoven (2001) constructed a self-report multidimensional instrument (the Cognitive Emotion Regulation Questionnaire or CERQ) designed to assess a range of cognitive emotion regulation strategies. The full instrument has 36-items evenly divided among nine subscales: four are adaptive strategies (Putting into perspective, Positive refocusing, Positive reappraisal and Planning) and five are maladaptive strategies (Self-blame, Other-blame, Rumination, Catastrophizing, and Acceptance). The CERQ has demonstrated promising psychometric properties and has become widely adopted in clinical practice.

Garnefski and Kraaij (2006) also developed a fast screening instrument for use among psychiatric patients and to enable easier inclusion in large questionnaire batteries. The strategy employed was to halve the number of items on each subscale through the use of a stepwise omission process based on the highest ‘alpha if item deleted’ criterion. The hypothesized factor structure of the instrument remained unchanged with principle components analysis (PCA) producing the expected nine factors accounting for 82.7% of variance. While this approach provides a simple way of culling items, it risks creating scales that are too narrow and with attenuated reliability and validity (Loevinger, 1954). Specifically, removal of components based on
alpha if item deleted' has been shown to inflate coefficient alpha while leading to a deterioration of actual reliability and validity (Raykov, 2007, 2008). Furthermore, although the derivation study of the CERQ-short reported preliminary evidence for its validity (via PCA and correlations with depression and anxiety), novel replication in an independent sample remains crucial.

Confirmatory factor analysis (CFA) provides a powerful tool to test the hypothesized latent structure and construct validity of test instruments. Only one CFA of the full 36 item English instrument could be located (Garnefski & Kraaij, 2007). While model fit was adequate for a sample at two time points (time 1 AASR = 0.045, χ² [546] = 591.58, p = 0.008, CFI = 0.92 and time 2 AASR = 0.049, χ² [560] = 558.79, p = 0.510, CFI = 0.97), there was a lack of detail in reporting the results particularly regarding the number and magnitude of error covariances that were freely estimated (the AASR or Average Absolute Standardized Residual measures degree of misfit and values ≤ 0.06 indicate good fit). The 9-factor structure of the full CERQ has also been examined and supported by investigations using other language groups such as French (Jermann, Linden, d’Acremont, & Zermatten, 2006), Spanish (Domínguez-Sánchez, Lasa-Aristu, Amor, & Holgado-Tello, 2011), Chinese (Zhu et al., 2008), Turkish (Tuna & Bozo, 2012). However, confirmatory factor analyses of the English version of full CERQ as well as the CERQ-short are required to validate the hypothesized structure of these instruments.

The aim of this study was to test the theoretical structures of the CERQ and CERQ-short in a mixed non-clinical sample. A secondary aim was to compare the extent that CERQ and CERQ-short short scales covary with subscales from the Difficulties in Emotion Regulation Scale (DERS) and predict positive and negative affect, thus determining their convergent and criterion validity. These validity scales were selected for several reasons. The choice of the DERS for converging validity was based on the need for a well-validated emotion regulation instrument that captured a broad range of emotion regulation facets. The DERS and the Emotion Regulation Questionnaire (ERQ: Gross & John, 2003) are the best validated emotion regulation instruments, however the ERQ is restricted to measuring only two facets of emotion regulation. Regarding criterion validity, it is well established that emotion regulation has a direct influence on emotional experiences, however given the current sample was not a clinical sample, we were concerned that commonly used emotional disturbance scales such as measures of anxiety and depression may suffer a restriction in range. Therefore, the PANAS was selected as the criterion measure as it is one of the most well-established instruments to assess positive and negative affective states in non-clinical samples.

It was hypothesized that the CERQ subscales representing maladaptive strategies would correlate positively with greater Difficulties in Emotion Regulation Strategies and Negative affect, and would correlate inversely with Positive affect. Conversely, the CERQ subscales representing adaptive strategies would correlate inversely with greater Difficulties in Emotion Regulation Strategies and Negative affect, and would correlate positively with Positive affect.

2. Method

2.1. Participants and procedure

The sample consisted of 795 community residents (68.3% in full- or part-time employment) and students (17.4%). Most participants were female (70%) and the mean age was 36.36 (SD = 13.86).

Following ethics approval by the host institution, data was collected anonymously online, using the research platform Qualtrics. Community participants were recruited via social media advertisements, personal networks, discussion forums, email discussion lists, and snowball sampling. Student participants were recruited through the online research participation portal at the host institution, and could apply for course credit in exchange for their participation. No other incentives were offered.

2.2. Measures

2.2.1. Cognitive emotion regulation questionnaire

The CERQ is a 36 item self-report measure of cognitive emotion regulation strategies used when responding to a stressful life event. There are nine four-item subscales with five of them assessing maladaptive and adaptive regulatory responses. Participants rate how often statements apply to them on a five point scale from 1 “almost never”, to 5 “almost always”. Each subscale demonstrates acceptable internal consistency (Cronbach’s α > 0.70) and the CERQ has been shown to have acceptable test-retest reliability (ranging from 0.41 to 0.59; Garnefski et al., 2001).

The CERQ-short is a brief version of the CERQ that halves the number of items for each of the nine subscales. Alpha coefficients for the short scales range from 0.68 (Self-blame) to 0.81 (Positive appraisal and Catastrophizing; Garnefski & Kraaij, 2006).

2.2.2. Positive and negative affect schedule

The Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) is a 20-item scale (10 for each construct) designed to measure positive and negative affectivity. Participants rate how often statements apply to them on a five-point scale from 1 “very slightly or not at all”, to 5 “extremely”. Since its introduction, the PANAS has accumulated a compelling body of evidence attesting to its reliability and validity.

2.2.3. Difficulties in emotion regulation scale

The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004). The DERS is a 36-item measure that evaluates the individual’s response to negative emotional states. Participants rate how often statements apply to them on a five-point scale from 1 “almost never”, to 5 “almost always”. Items combine to form six subscales: Lack of acceptance of emotions (example item, “When I’m upset, I feel guilty for feeling that way”), inability to engage in goal-directed behavior, Impulse control difficulties when upset; (4) Limited access to strategies for emotion regulation; (5) Lack of awareness of emotions; and (6) Lack of clarity of emotions. The total DERS demonstrated high internal consistency (α = 0.93), with all six subscales also demonstrating adequate internal consistency (Cronbach’s α > 0.80).

2.3. Analysis

Mplus version 7.4 (Muthén & Muthén, 2012) was used for CFAs and IBM SPSS version 22 was used for the other analyses. Due to non-normality (Mardia’s normalized coefficient of multivariate kurtosis exceeded recommended cut-off critical ratio < 3.00), the measurement models were fit using the Satorra-Bentler scaling correction (MLM estimator; Satorra & Bentler, 1994), which estimates a mean-adjusted chi-square to account for non-normal data.

CFA model fit was assessed against multiple criteria. The chi-square test is reported though interpreted with caution given it is heavily influenced by sample size. The relative χ² (χ² df) will also be used since it is adjusted for sample size, and alternative fit indices including the Root Mean Squared Error of Approximation (RMSEA: Steiger, 1990), Standardized Root Mean Square Residual (Hu & Bentler, 1999), and Comparative Fit Index (CFI; Bentler, 1990) are reported to assess model fit. Following convention (Hu & Bentler, 1999), good model fit is indicated by non-significant chi-square, a relative χ² < 3 (Kline, 2011), RMSEA and SRMR less than approximately 0.07 (Steiger, 2007), and CFI > 0.95 (Hooper, Coughlan, & Mullen, 2008).
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