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Measures of Emotion Reactivity and Emotion Regulation: Convergent and Discriminant Validity

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Abstract

Emotion reactivity and emotion regulation are salient constructs in theories of emotion and emotion disorders; however, little is known about the convergent and discriminant validity of instruments used to measure them. The current paper examines the validity of four emotion-regulation and three emotion-reactivity instruments (with a total of 27 subscales) across three independent samples of university students (total $N = 715$). Eight subscales from a coping instrument were also examined. Confirmatory factor analysis failed to show the expected patterns of convergent and discriminant validity; however, exploratory factor analysis revealed three different factors, reflecting out-of-control negative emotion, emotion awareness and expression, and cognitive strategies for emotion regulation. Results have implications for both basic emotions research and clinical science.

Keywords

Emotion regulation; Emotion reactivity; Coping; Psychometrics; Validity

For decades, researchers have tried to distinguish characteristics of an emotion response and its regulation (e.g., Cole, Martin, & Dennis, 2004; Gross, 1998a; Gross, 2013; Gross & Barrett, 2011; Sheppes, Suri, & Gross, 2015; Thompson, 1994). This distinction is important for both clinicians and researchers. Emotion regulation and reactivity are salient constructs in theories of psychopathology and as treatment targets. Although psychophysiological, neurological, and behavioral measures are being developed, self-report measures remain the norm (Robinson & Clore, 2002). Many self-report measures of emotion regulation (EReg) and emotion reactivity (EReact) exist; however, no study has systematically examined their convergent or discriminant validity. The current paper reports results from three studies examining the psychometric properties of multiple measures of emotion reactivity and emotion regulation and tests hypotheses about their convergent and discriminant validity.

EReact refers to how readily one experiences an emotion, with what intensity, and for what duration (Davidson, 1998). Researchers have used various methods to infer emotion reactivity, ranging from psychophysiological indicators to having individuals self-report affect before and after a stimulus (e.g., Suls, Green, & Hillis, 1998). Early self-report

measures, such as the Affect Intensity Measure (AIM; Larson & Diener, 1987) and the Emotion Intensity Scale (EIS; Bachorowski & Braaten, 1994) focused on the intensity component. More recently, Nock, Wedig, Holmberg, and Hooley (2008) developed the Emotion Reactivity Scale (ERS) to measure all three components of emotion reactivity. Although the ERS generates three separate subscales, factor analyses revealed that a single underlying factor best explained the items (Claes, Smits, & Bijttebier, 2014; Lannoy, et al., 2014; Nock et al., 2008).

Definitions of EReg vary by theory. Two popular conceptions include that of Gross (1998) and Gratz and Roemer (2004). In Gross' (1998) process-oriented model, emotion regulation is defined as "processes by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions" (p. 275). This definition distinguishes processes in play before an individual experiences the emotional response (antecedent-focused regulation) from processes directly modulating the emotional response (response-focused regulation). The widely-used Emotion Regulation Questionnaire (ERQ) was based on this model (Gross & John, 2003).

Gratz and Roemer (2004) developed a competency-focused model, defining EReg as "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" (pp 42-43). Their Difficulties in Emotion Regulation Scale (DERS) assesses people's self-reported efficacy in each of the four domains of emotion regulation.

The current research addressed three questions. The first focused on whether diverse self-report measures of EReact show convergent validity by loading onto the same underlying factor(s). Preliminary evidence of convergent validity exists. Gohm and Clore's (2000) hierarchical cluster analysis on several scales, including the EIS and the AIM revealed strong convergence between the EIS and AIM but a smaller degree of convergence between the intensity measures and a mood reactivity measure. Initial validation studies of the EIS showed medium to medium-large correlations between EIS subscales and the AIM (Bachorowski & Braaten, 1994). Gohm, Corser, and Dalsky (2005) found a large correlation between the AIM and EIS in a sample of university students. Jones, Leen-Feldner, Olatunji, Reardon, and Hawks (2009) reported moderate correlations between an adolescent version of the AIM and affect-change following mood induction.

Our second question focused on whether measures reflecting a process-oriented conception of emotion regulation (e.g., ERQ) and those reflecting an emotional competency model (i.e., DERS) would converge on the same underlying factor(s). Modest evidence of convergent validity can be found in small-to-medium correlations between aspects of the DERS and both the antecedent- and response-focused dimensions of the ERQ (i.e., cognitive reappraisal and suppression; Bardeen & Fergus, 2014; Burns, Roberts, Egan, & Kane, 2015; Desrosiers, Vine, Klemanski, & Nolen-Hoeksema, 2013; Ehring & Quack, 2010; Salsman &

Linehan, 2012). Our goal was to use factor analytic methods to examine the convergence of not only the ERQ and DERS, but other selected measures of specific regulation strategies.

Our third question was whether measures of EReg and measures of EReact demonstrate discriminant validity. The degree of discriminant validity expected between measures of different constructs depends upon the degree of theoretical overlap between them (Cronbach & Meehl, 1955). The conceptual distinction between EReact and EReg depends on one's theory of emotion. Gross and Barrett (2011) put these theories into four clusters and detailed the degree to which they distinguish between EReact and EReg. Basic emotion and appraisal theories regard EReact and EReg as highly distinct constructs; psychological construction and social construction theories regard them as virtually inseparable (Gross & Barrett, 2011). Empirical evidence of discriminant validity between EReg and EReact measures is mixed. For example, Salsman and Linehan (2012) administered the AIM along with the ERQ and DERS to undergraduates. Correlations between EReg and EReact subscales ranged from small and nonsignificant to large and significant. Veilleux, Skinner, Reese, and Shaver (2014) also obtained highly variable correlations between measures of EReact and DERS subscales. Claes, Smits, and Bijttebier (2014) administered the ERS and a measure designed to assess strategies for coping with (i.e., regulating) highly emotional issues to a sample of Belgian high schoolers. Correlations ranged from small to medium, depending on the subscales. Researchers have reported *positive* associations between heightened EReact and measures of some EReg strategies (e.g., rumination, self-blame) but *negative* associations between EReact and other EReg strategies (e.g., emotional suppression, positive reappraisal; Aldinger, et al., 2013; Cheavens & Heiy, 2011; Lannoy et al., 2014; Rubin, Hoyle, & Leary, 2012; Tortella-Feliu, Balle, and Sesé, 2010). The discriminant validity of EReg and EReact measures requires a more systematic investigation.

For the current research, we selected four measures of emotion regulation and three measures of reactivity (27 subscales in all), based on their widespread use in the clinical literature. Because of conceptual similarities between EReg and coping, we also administered a coping measure (with 8 subscales). Table S1 lists these measures, example items, and the definitions of EReact and EReg articulated by the measures' authors.

Methods

Overview

As parts of larger studies, we administered partially overlapping subsets of EReg, EReact, and coping measures to independent samples of participants all recruited from the research pool at a mid-sized private university (see Table S2). This allowed us to obtain a variety of measures while adhering to time limitations pre-determined by the university's research-credit compensation schedule. We then combined the data sets to maximize the sample size for our analyses.

Participants

Study 1 participants were 379 undergraduates. Approximately 79.1% were female. Average age was 18.62 years ($SD = 0.88$). The sample was somewhat ethnically diverse: 76.3%

Caucasian, 14.0% Asian American, 5.3% Hispanic, and 9.8% African American (race/ethnicity categories were not mutually exclusive).

Study 2 participants were 351 undergraduates recruited across spring and fall 2014. Approximately 73.9 % were female. Average age was 19.40 years ($SD = 1.15$). Ethnicities represented: 69.8 % Caucasian, 17.1% Asian American, 7.1% Hispanic, and 10% African American.

Participants took part in only one study. All provided informed consent.

Study 1 measures

In study 1, measures of EReg were the ERQ, the Regulation of Emotions Questionnaire (REQ; Phillips & Power, 2007), and the DERS. Measures of EReact were the ERS, EIS, and the Affect Intensity and Reactivity Measure for Youth (AIR-Y; Jones, Leen-Feldner, Olatunji, Reardon, & Hawks, 2009). Reliability based on the current data appears in Table 4. We also included the Positive and Negative Affect Scales (PANAS; Watson, Clark, & Tellegen, 1988) to determine the emotional valence of the resulting factors.

The ERQ is a 10-item questionnaire assessing the extent to which respondents use cognitive reappraisal (6 items) or suppression strategies (4 items) to regulate emotions. Factor analysis supported a two-factor structure. Respondents rate their each statement on 1 (strongly disagree) to 7 (strongly agree) Likert scales. In previous research, Cronbach's alphas averaged .79 for the reappraisal scale and .73 for the suppression scale, and test-retest reliability for each scale was .69 (Gross & John, 2003).

The REQ consists of 19 examples of emotion regulation techniques. Items reflect functional and dysfunctional strategies as well as externally versus internally-oriented strategies. Respondents endorse how much they use each technique, using 1 (not at all) to 5 (always) Likert scales. Factor analysis supports four scales: internal-dysfunction regulation strategies, internal-functional regulation strategies, external-dysfunction strategies and external-functional strategies. The REQ has good construct validity insofar as it correlated in the anticipated directions with measures of emotional and behavioral problems. In previous research, Cronbach's alphas for its scales ranged from .66 to .76 (Phillips & Power, 2007).

The DERS is a 36-item questionnaire assessing deficits in EReg. The instrument was validated in a sample of undergraduates, where it produced six scales: nonacceptance of emotional responses, difficulties in engaging in goal-directed behaviors, impulse control difficulties, lack of emotional awareness, limited access to EReg strategies, and lack of emotional clarity. Respondents indicate the extent to which a particular behavior or cognition is true for them, using 1 (almost never) to 5 (almost always) Likert scales. Higher scores reflect EReg difficulties. Cronbach's alpha for all scales exceed .80, and the instrument has excellent test-retest reliability (Gratz & Roemer, 2004).

The ERS instructs respondents to consider how they experience emotion in general. Respondents rate their agreement with 21 statements on 1 (not at all like me) to 5 (completely like me) Likert scales. Factor analysis supported a single factor of overall reactivity (Nock, et al., 2008). The ERS showed high internal consistency in an adolescent

validation sample (Cronbach's $\alpha = .94$), and the scale has also been used successfully with college students (Glenn et al., 2011).

The EIS is a 30-item measure assessing the intensity of emotional experiences. Respondents are asked to imagine themselves in 14 positive situations and 16 negative situations. For each, they select one of five responses that best indicates the intensity with which they would feel the emotion. The EIS was validated in a sample of undergraduates and showed strong internal consistency (Cronbach's $\alpha = .90$ for the total scale) and test-retest reliability ($r_s = .71 - .87$) (Bachorowski & Braaten, 1994).

The AIR-Y is a 40-question measure assessing perceptions of how strongly respondents experience positive and negative emotions. The scale was adapted from the Affect Intensity Measure (Larsen, 1984). The AIR-Y differs from the original measure only through simplified vocabulary. Respondents endorse statements about physical, cognitive, and affective components of emotion, using 1 (never) to 6 (always) Likert scales. Factor analysis supported a three-factor structure for the original measure (Bryant, Yarnold, & Grimm, 1986): Positive Affectivity, Negative Reactivity, and Negative Intensity. Cronbach's alphas were .90, .70, and .73, respectively, in a community-based sample of adolescents. The measure has adequate test-retest reliability (Jones et al., 2009).

The PANAS is a commonly-used, well-validated measure that assesses the extent to which respondents have experienced 12 positive and 12 negative affective states. Respondents endorse how much they experienced each affect over the last month on a 1 (not at all) to 5 (extremely) Likert scale. The PANAS has high test-retest reliability and internal consistency (Watson et al., 1988).

Study 2 measures

In study 2, we added two measures focusing on specific cognitive and behavioral strategies: the Cognitive Emotion Regulation Questionnaire (CERQ; Garnefski, Kraaij, & Spinhoven, 2001) and the Coping Strategies Inventory (CSI; Tobin, Holroyd, Reynolds, & Wigal, 1989). Although the latter technically measures coping, it assesses many of the same cognitive strategies tapped by the CERQ. To offset increased respondent burden, we dropped the REQ, EIS-Positive, and AIR-Y Positivity and Negative Reactivity, as these measures showed weaker psychometrics/less relevance to psychopathology.

The CERQ consists of 36 possible cognitions someone might experience in response to negative or unpleasant events. Participants endorse the frequency with which they have each cognition on a 1 (almost never) to 5 (almost always) scale. The items constitute nine scales reflecting different cognitive strategies: positive reappraisal, self-blame, acceptance, rumination, positive refocusing, refocus on planning, putting into perspective, blaming others, catastrophizing. Subscales have adequate reliability (alphas range from .68 to .83) in samples of high school and college students (Garnefski et al., 2001; Martin & Dahlen, 2005).

The CSI prompts participants to write briefly about a recent stressful situation. Participants then rate the extent to which they used 72 different strategies in response to the event. These

strategies are grouped into eight subscales: problem-solving, cognitive restructuring, express emotions, seeking social support, problem avoidance, social withdrawal, wishful thinking, and self-criticism. This measure was validated in a university sample and exhibited adequate reliability (subscale alphas = .71-.94). A 32-item short form of the measure has also shown adequate psychometric properties (Hooberman, Rosenfeld, Rasmussen, & Keller, 2010). We administered the long form with participants recruited in the spring and the short form among those recruited in the fall.

Procedure

Except for changes in the battery of measures, procedures were the same in all studies. Participants independently completed the questionnaires online. Those whose scores suggested high levels of negative emotion (and possible depression) and those who indicated that they wanted psychological help were referred to the university psychological services and counseling center. All participants received research credit in their classes in exchange for their participation. Responses were visually inspected to detect careless or inappropriate responding. Participants were permitted to omit any question of their choosing. Missing data thus varied by subscale but ranged between two and four percent for the total sample.

Results

Descriptive Statistics and Correlations

Means and standard deviations for the two studies appear in Table 1. For variables that were used in both studies, we tested for cross-study differences. Although the means were similar across samples, independent-sample t-tests revealed that participants in study 1 had higher scores on both ERQ subscales, the AIR-Y Negative Intensity and EIS Negative subscales (p s < .05) compared to participants in study 2. Effect sizes for these differences were all in the small to medium range (Cohen's D s < .40). We also tested homogeneity of variances and covariances across groups. Box's tests were nonsignificant (p s > .10). Consequently, we pooled data across samples where possible. In our first set of analysis, we focused on measures that were administered in study 1 but used participants from both studies (see Table S2). In our second set of analyses, we focused on the measures administered in study 2 and again used participants from all three studies. We used full information maximum likelihood estimation methods to handle missing data. Correlations among the variables used in these two sets of analyses appear in Tables 2 and 3.

Factor Analysis of Each Measure

We began by assessing the factor structure of each individual measure and comparing the results to previously published factor analyses that were used to distinguish the subscales for each measure. We used principal axis factoring with oblique rotation and a factor cutoff of .3 to determine if an item loaded onto the same factor as in the original study. For every measure, results supported the same number of factors as extracted in the original validation study. Here, we present only an overview of the results. Complete results are available from the first author upon request. As shown in Table 4, item loadings and internal consistency data supported use of previously recommended subscales. For these reasons (and to remain

commensurate with papers that have used these measures), we used the original subscales in all subsequent analyses.¹

Factor Analysis of Study 1 Measures

Our first set of analyses focused on 18 emotion regulation and reactivity subscales from the ERQ, REQ, DERS, ERS, EIS, and AIR-Y. Because of our strong *a priori* hypotheses about which measures should load onto EReg versus EReact factors, we began with confirmatory factor analysis (CFA). Specifically, we created a two-factor model that allowed only regulation subscales to load onto an EReg factor and only reactivity subscales to load onto an EReact factor. The model provided an extremely poor fit by all criteria; furthermore, out-of-range parameter estimates (i.e., negative error variances and factor loadings greater than unity) prohibited model interpretation. Consistent with Kenny and Kashy's (1992) recommendations for accommodating shared method variance, we then modified the model to allow correlations between residuals of measures deriving from the same questionnaire. This model also provided poor fit to the data (i.e., chi-square significant at $p < .0001$, RMSEA $> .15$, CFI $< .80$, and TLIs $< .78$).

Instead of engaging in *post hoc* model modifications (Bollen, 1989), we switched to exploratory factor analysis (EFA) methods using Mplus, version 7.31 (Muthén & Muthén, 1998-2015). Parallel analysis of eigenvalues supported the extraction of two factors. Oblique (Oblimin) rotation yielded the results shown in the left half of Table 5.

The two emergent factors did not cleanly correspond to EReg and EReact. Some measures of EReg (DERS Strategies, DERS Goals, DERS Impulse, DERS Nonacceptance, REQ Internal Dysfunctional) loaded onto factor 1; others (DERS Awareness, ERQ Suppression, REQ External Functional) loaded onto factor 2. The same was true for putative measures of EReact. Some (ERS; AIR-Y Negative Intensity, EIS Negative) loaded onto factor 1; others (EIS Positive, AIR-Y Positivity, AIR-Y Negative Reactivity) loaded onto factor 2.

To interpret these unexpected factors, we identified scales with the highest factor loadings for each factor. We then characterized each scale in terms of its most representative items (i.e., *items* with the highest loadings in the previous, single-instrument factor analyses). Factor 1 was characterized by some EReg measures and some EReact measures. Factor 1 EReg subscales contained items such as "When I'm upset, I believe that I'll end up feeling very depressed" (DERS Strategies), "When I'm upset, I have difficulty controlling my behaviors" (DERS Impulse), and "I dwell on my thoughts and feelings" (REQ Internal Dysfunctional). Factor 1 EReact subscales contained items such as "I tend to get emotional very easily" (ERS), "My negative moods are not very strong" (AIR Negative intensity, reversed), and "[When] someone criticizes me, I feel...so extremely upset I could cry" (EIS Negativity). Consequently, we dubbed Factor 1 the *Out-of-control Negative Emotions* factor, as it appeared to represent the degree to which a person experiences strong negative

¹We note that reliability estimates were low for the AIR-Y Negative Reactivity subscale, CSI Problem Avoidance and Wishful Thinking subscales, CERQ Acceptance subscale, and all four REQ subscales. We also had difficulty replicating the composition of the CERQ Catastrophizing scale; only one of the four items specified by the authors loaded onto this subscale in our factor analysis. At the overall instrument level, results of the parallel analysis and visual inspection of the scree plot indicate possible over-factoring of the CERQ and CSI.

emotions, emotions so strong that they are beyond one's ability to regulate. Not surprisingly, the Negative Affect scale of the PANAS also loaded strongly here, confirming the negative valence of the factor. As such, this factor (like many of the subscales that load onto it) conflates the experience of strong negative emotion with the feeling that these emotions are out of control. At least on these self-report measures, respondents do not distinguish between the experience of strong negative emotion and the sense that their emotions are out of control.

Factor 2 was characterized by EReg measures containing items such as "I talk to someone about how I feel" (REQ External Functional, positive factor loading), "I pay attention to my feelings" (DERS Awareness, negative loading but reverse scored) and the reverse of "I keep my emotions to myself" (ERQ Suppression, positive loading but reverse scored). Factor 2 was also characterized by EReact measures containing items such as "[When] I am happy, I feel... euphoric, so happy I could burst" (EIS Positive), "When I do something wrong, I have strong feelings of shame and guilt" (AIR-Y Negative Reactivity). We dubbed Factor 2 *Emotional Awareness and Expression*, as it appears to represent the degree to which individuals are aware of, admit to, and express strong pro-social emotions ranging from joy to guilt. The aggregation of these particular measures under a single factor again suggests a conflation of EReact (e.g., having/experiencing strong pro-social emotions) and behaviors sometimes considered EReg strategies (e.g., expressing such emotions or talking about them with others). On this set of measures, respondents do not distinguish between awareness of and the expression of these emotions. (Interestingly, the correlation between factors 1 and 2 was very small, suggesting near orthogonality of out-of-control negative emotions and emotional awareness and expression.)

Diverse measures of EReg failed to load onto the same latent variable; likewise, diverse measures of EReact failed to converge onto a common factor. Evidence of discriminant validity was also very weak: Some measures of EReg had more in common with measures of EReact than they did with other measures of regulation. Likewise, some measures of EReact had more in common with measures of EReg than with other measures of EReact. In several cases, different subscales from the same instrument loaded onto different latent variables.

Factor Analysis of Study 2 and 3 Measures

Study 2 reflected two major changes from study 1. First, to place greater emphasis on specific cognitive and behavioral strategies for regulating (or coping with) strong negative emotion, we added the CERQ and CSI. Second, we dropped the positive subscales of the EIS and AIR-Y (to focus on negative emotion reactivity and regulation) and the REQ (due to low subscale reliability). This resulted in 28 EReg, EReact, and coping subscales (see Table S2). This time, parallel analysis supported the extraction of three factors. Oblique rotation yielded the factor loadings presented in the right half of Table 5. Four findings are noteworthy.

First, factor 1 from the first analysis was replicated in the second analysis. Variables that loaded onto the Out-of-control Negative Emotions factor in the first analysis also loaded .40 or greater onto factor 1 in the second analysis, with the sole exception of the DERS Clarity

subscale. Of the new measures, the Self-blame, Rumination, and Catastrophizing subscales of the CERQ and the Wishful thinking and Social withdrawal subscales of the CSI also loaded onto factor 1. See Table 1 for example items from these subscales. These regulation/coping subscales, like the others that loaded onto this factor, might represent more extreme responses to negative emotions; alternatively, they may represent maladaptive efforts at EReg that perpetuate or exacerbate the adverse emotional response. Again, we refer to this factor *Out-of-control Negative Emotion*.

Second, the *Emotion Awareness and Expression* factor from the first analysis re-emerged. Two EReg variables that loaded negatively onto factor 2 in the first analysis also loaded negatively onto factor 2 here: DERS Awareness (reversed scored) and ERQ Suppression. In addition, two coping subscales loaded onto factor 2 in the second analysis: CSI Express emotions subscale and the CSI Social support subscale. The only inconsistency between the first and second analysis was that DERS Clarity loaded on factor 2 rather than factor 1. Taking rescaling and negative loadings into account, factor 2 again reflects awareness and expression of strong emotions. The correlation between the two factors was small, providing evidence of orthogonality between out-of-control negative emotions and emotion awareness and expression.

Third, a new factor emerged, reflecting concrete cognitive strategies for regulating negative emotion. Loading onto this factor were the Positive reappraisal, Refocus on planning, Putting into perspective, Positive refocusing, and Acceptance subscales of the CERQ, the Cognitive restructuring and Problem-solving subscales of the CSI, and the Cognitive reappraisal subscale of the ERQ. All were either measures of regulation or coping. We dubbed this factor *Cognitive Strategies for Emotion Regulation*. Low correlations of this factor to factors 1 and 2 suggest that successful use of these cognitive strategies is nearly orthogonal to the experience of out-of-control negative emotions (factor 1) and emotion awareness and expression (factor 2).

Fourth, subscales from the same measures routinely loaded onto different factors. This alone strongly argues against summing across all the subscales from any one of these measures, as doing so would produce a composite that conflates out-of-control negative emotions, emotion awareness and expression, and cognitive strategies for coping with emotions.

Discussion

Four major results emerged from this study of EReg and EReact. The first is that our multi-measure factor analyses of a relatively large collection of EReg and EReact measures did not support hypothesized patterns of convergent and discriminant validity. Measures that have been nominally (and sometimes theoretically) linked to the same construct loaded onto separate factors; measures designed to represent qualitatively different constructs often converged onto the same factor. Second, with currently available self-report measures, the tendency to experience strong negative emotion appeared indistinguishable from the failure to regulate such emotions. Third, the awareness and experience of strong pro-social emotion appeared indistinguishable from the self-reported tendency to express or discuss these emotions with others. Fourth, the use of cognitive strategies to regulate emotion appeared

indistinguishable from coping strategies, suggesting opportunities for synergy across the EReg and coping literatures. Details and implications of these results continue below.

Our first set of findings focus on convergent and discriminant validity of EReg and EReact measures. Exploratory factor analyses of three EReact measures (six subscales) and four EReg measures (21 subscales) revealed an unexpected pattern of results. Specifically, emotion regulation and reactivity subscales frequently loaded onto the same factor, and subscales from the same measure often loaded onto different factors. Reflecting a factor that we call *Out-of-control Negative Emotions* were various subscales from EReg measures, EReact measures, and a coping measure. Reflecting a second factor that we call *Emotional Awareness and Expression* were a different set of subscales from measures of EReg, EReact, and coping. A third factor, which we call *Cognitive Strategies for Emotion Regulation*, also emerged on which subscales loaded from EReg measures and a coping measure. Correlations among these factors suggest a high degree of orthogonality.

At a practical level, these findings have important research implications. One is that researchers should be cautious about summing subscales from the same measure. Not only do they reflect different factors, those factors are not sufficiently correlated to suggest that they represent a superordinate factor. Second, researchers should not assume that measures of nominally different constructs actually measure different things. This is especially important for researchers testing theoretical models that invoke both EReg and EReact.

Our second major result was the emergence of a factor representing strong negative emotion, failure to down-regulate such emotions, and use of maladaptive regulation strategies. Phenomenologically, feeling overwhelmed by negative emotion is coupled with feeling that emotions are out-of-control. We suspect that if people were capable of regulating these emotions, they probably would have; consequently, experiencing powerful negative emotions is coupled with thoughts of helplessness about avoiding or reducing these feelings. Results further suggested that maladaptive strategies such as catastrophizing also characterize the out-of-control negative emotional experience, suggesting that these strategies may mark intense negative emotionality rather than (or in addition to) a regulation skills deficit. To be clear, we are not saying that the experience of strong negative emotion, the existence of emotional dysregulation, and use of maladaptive strategies are necessarily parts of the same process. That conclusion would require further research. What the current study tells us is that people cannot distinguish between these processes using self-report measures of EReact and EReg.

A third important result was that the experience of strong pro-social emotions appears to be indistinguishable from self-reported awareness of emotions and emotional expression. Sometimes, emotional awareness has been conceptualized as a component of EReg itself; other times, it has been regarded as an attribute undergirding adaptive EReg (Gratz & Roemer, 2004; Gross & Jazieri, 2014). Thus, it is theoretically consistent to see that emotional awareness and the reduced use of emotional suppression loaded onto the same factor (e.g., Aldao, Nolen-Hoeksema, & Schweizer, 2010; Gross & James, 2003). We emphasize that results of the current study do not necessarily indicate that these processes are indistinguishable parts of a single process; rather, they indicate that people cannot make

these distinctions with available self-report questionnaires. Exploring how different forms of emotional expression relate to emotional awareness and pro-social EReact will be an important goal for future research.

These results suggest a possible disconnect between what people can distinguish about aspects of their emotional experiences at a phenomenological level and what psychologists can distinguish at a theoretical level. Some major theories of emotion, particularly basic emotion and appraisal theories, articulate distinctions between EReact and EReg (Gross & Barrett, 2011). People's responses on the measures used in the study did not correspond to this distinction. One explanation for this may be that we need better measures of these constructs. A second explanation could be that people are not capable of reporting on the distinction between EReact and EReg. The phenomena of emotional reaction and its regulation may simply be too intertwined to be disentangled by *any* conventional self-report measure. A third explanation for this disconnect is that individuals report quite clearly about their emotional experience and that a theoretical parsing of emotions into constructs such as EReact and EReg is inaccurate. In this case, a theoretical framework that integrates the constructs (e.g., a psychological constructionist view or personality factor such as trait emotional intelligence) might better guide research efforts (Gross & Barrett, 2011; Petrides, Pita, & Kokkinaki, 2007). All three explanations warrant further investigation.

Our fourth major finding was the confluence of measures of coping with measures of emotion regulation. Cognitive strategies for coping and cognitive strategies for EReg loaded onto a general cognitive strategies for emotion regulation factor.² Gross (1998a) outlined key differences between the constructs of coping and EReg, noting that coping includes both nonemotional and emotional responses to stressful events, whereas EReg includes the modulation of emotion responses to both stressful and nonstressful events. Compas et al. (2014) echoed these distinctions but also outlined similarities between these two constructs, noting that both constructs emphasize conscious attempts at regulation. Our data suggest that people who use a particular set of coping strategies for one set of stressful events also use the same strategies for regulating stressful emotions.

At least three shortcomings of the current study suggest avenues for future research. First, our sample consisted of undergraduates at a private university. Additional research must assess the generalizability of our results to older, younger, and more clinically relevant populations. It will also be important to assess whether the factor structure revealed here remains consistent across gender. Although the current study was not designed to assess gender differences, past research suggests this will be an important question to examine in the future (e.g., Nolen-Hoeksema, 2012). Second, we were unable to administer all self-report measures of reactivity and regulation to all participants. Instead, some participants only completed subsets of measures, and we used missing data techniques when conducting the analyses. We were also unable to include psychophysiological, neurological, or behavioral measures. Future research should include these types of measures, along with

²Other aspects of coping behaved differently. Maladaptive coping strategies such as wishful thinking, along with EReg measures of catastrophizing and self-criticism, loaded onto our Out-of-control Negative Emotions factor. Adaptive coping strategies such as seeking social support and expressing one's emotions, along with EReg measures of awareness and (non-)suppression, loaded onto our Emotional Awareness and Expression factor.

additional instruments to assess other forms of coping. Where self-report measures are remain the focus, it would also be valuable to include measures of social desirability to determine how this impacts participant responses. Third, only study 1 included measures of *positive* EReact. More extensive examination of positive and negative EReact would allow researchers to assess whether the same patterns of convergent and discriminant validity pertain to positive and negative emotions.

Researchers have relied extensively on self-report methods of emotion regulation and reactivity to examine how these constructs relate to a wide range of clinical and social psychological phenomena. Although these efforts have produced important knowledge, the current results suggest that available self-report measures (and their underlying factors) may not correspond tightly to the constructs they are often used to represent. Researchers who wish to study emotion reactivity and regulation as theoretically distinct constructs should take care in interpreting results from these measures, as alternative conceptualizations may be warranted.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1

Means and Standard Deviations by Study

Measure subscale	Study 1 (n = 379)		Study 2 (n = 336)		Total (n = 715)	
	M	SD	M	SD	M	SD
ERQ Suppression	14.67	5.72	13.75	5.09	14.24	5.45
ERQ Cognitive Reappraisal	30.21	6.23	28.68	5.90	29.49	6.12
DERS Nonacceptance	13.77	5.95	13.39	5.40	13.59	5.70
DERS Impulse	10.85	4.11	11.16	4.73	11.00	4.41
DERS Strategies	18.13	6.73	17.18	6.40	17.69	6.59
DERS Clarity	11.33	3.68	11.67	3.76	11.49	3.72
DERS Awareness	14.08	4.04	14.72	4.96	14.37	4.50
DERS Goals	16.01	4.86	15.60	4.65	15.82	4.76
Emotion Reactivity Scale	30.06	14.41	28.76	16.44	29.45	15.40
AIR-Y Positivity	3.79	0.69	--	--	3.79	0.69
AIR-Y Negative Intensity	3.32	0.75	3.09	0.91	3.22	0.83
AIR-Y Negative Reactivity	3.99	0.79	--	--	3.99	0.79
EIS Positive	50.50	5.77	--	--	50.50	5.77
EIS Negative	52.97	7.37	50.01	7.99	51.60	7.80
REQ Internal-Dysfunctional	12.61	3.56	--	--	12.61	3.56
REQ Internal-Functional	17.47	3.11	--	--	17.47	3.11
REQ External-Dysfunctional	7.93	2.70	--	--	7.93	2.70
REQ External-Functional	13.41	2.97	--	--	13.41	2.97
CERQ Self-blame	--	--	10.63	3.16	10.63	3.16
CERQ Acceptance	--	--	12.19	2.96	12.19	2.96
CERQ Rumination	--	--	12.14	3.49	12.14	3.49
CERQ Positive Refocusing	--	--	9.82	3.55	9.82	3.55
CERQ Refocus on Planning	--	--	12.91	3.24	12.91	3.24
CERQ Positive Reappraisal	--	--	12.98	3.24	12.98	3.89
CERQ Putting into Perspective	--	--	12.74	3.76	12.74	3.76
CERQ Catastrophizing	--	--	7.89	3.25	7.89	3.25
CERQ Blaming Others	--	--	8.10	2.90	8.10	2.90
CSI Problem-solving	--	--	12.79	4.46	12.76	4.21
CSI Cognitive Restructuring	--	--	11.71	3.96	11.93	3.97
CSI Express Emotions	--	--	11.47	4.29	11.38	3.95
CSI Social Support	--	--	13.02	5.18	12.95	5.05
CSI Problem Avoidance	--	--	8.71	3.29	8.76	3.19
CSI Wishful Thinking	--	--	12.07	3.96	11.70	4.00
CSI Social Withdrawal	--	--	9.71	4.12	9.68	3.94
CSI Self-Criticism	--	--	10.64	5.04	10.82	5.06

Note. ERS=Emotion Reactivity Scale; AIR-Y=Affect Intensity and Reactivity Measure for Youth; EIS=Emotional Intensity Scale; ERQ=Emotion Regulation Questionnaire; REQ=Regulation of Emotions Questionnaire; DERS=Difficulties in Emotion Regulation Scale; CERQ=Cognitive Emotion Regulation Questionnaire; CSI=Coping Strategies Inventory

Table 2

Correlations among Variables in First Set of Analyses

Measure subscale	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.
1. DERS Nonacceptance	1.0																			
2. DERS Impulse	.46	1.0																		
3. DERS Strategies	.63	.69	1.0																	
4. DERS Clarity	.37	.34	.43	1.0																
5. DERS Awareness	.14	.08	.14	.53	1.0															
6. DERS Goals	.41	.45	.60	.26	.02	1.0														
7. ERS Total	.39	.62	.66	.24	-.09	.46	1.0													
8. AIR-Y Negative Reactivity	.23	.07	.15	.04	-.07	.25	.22	1.0												
9. AIR-Y Negative Intensity	.39	.48	.53	.17	-.16	.42	.72	.50	1.0											
10. AIR-Y Positivity	.08	.06	.00	-.03	-.17	.12	.12	.31	.36	1.0										
11. REQ Internal-Dysfunctional	.59	.41	.67	.36	.20	.40	.43	.15	.36	.01	1.0									
12. REQ Internal-Functional	-.07	-.26	-.29	-.25	-.29	-.20	-.22	.10	-.06	.14	-.12	1.0								
13. REQ External-Dysfunctional	.15	.43	.26	.11	.12	.19	.36	-.11	.20	.07	.22	-.13	1.0							
14. REQ External-Functional	-.14	-.05	-.18	-.21	-.34	.02	.02	.18	.14	.27	-.22	.33	-.01	1.0						
15. EIS Negative	.30	.28	.42	.17	-.05	.39	.52	.53	.60	.19	.34	-.12	.05	.09	1.0					
16. EIS Positive	.03	.01	.01	-.10	-.26	.12	.16	.28	.31	.62	.01	.10	-.02	.23	.42	1.0				
17. ERQ Suppression	.28	.07	.20	.31	.34	.03	-.02	-.10	-.06	-.16	.34	-.05	.02	-.44	-.04	-.20	1.0			
18. ERQ Cognitive Reappraisal	-.16	-.21	-.29	-.19	-.26	-.20	-.20	.03	-.07	.28	-.21	.32	-.09	.17	-.11	.20	-.11	1.0		
19. PANAS Negative	.40	.42	.50	.29	.05	.34	.51	.18	.43	.04	.42	-.10	.17	-.03	.36	.12	.12	-.12	1.0	
20. PANAS Positive	-.21	-.19	-.33	-.26	-.24	-.20	-.16	.10	-.07	.40	-.27	.28	-.13	.25	-.09	.25	-.22	.32	-.07	1.0

Note. ERS=Emotion Reactivity Scale; AIR-Y=Affect Intensity and Reactivity Measure for Youth; EIS=Emotional Intensity Scale; ERQ=Emotion Regulation Questionnaire; REQ=Regulation of Emotions Questionnaire; DERS=Difficulties in Emotion Regulation Scale; CERQ=Cognitive Emotion Regulation Questionnaire; CSI=Coping Strategies Inventory; PANAS=Positive and Negative Affect Scales.

$r_s > .10$ are significant at $p < .05$; $r_s > .18$ are significant at $p < .001$.

Table 3

Correlations among Variables in Second Set of Analyses

Measure subscale	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. DERS Nonacceptance	1.0															
2. DERS Impulse	.46	1.0														
3. DERS Strategies	.63	.69	1.0													
4. DERS Clarity	.37	.34	.43	1.0												
5. DERS Awareness	.15	.08	.14	.53	1.0											
6. DERS Goals	.41	.45	.60	.26	.02	1.0										
7. ERS Total	.39	.62	.66	.24	-.09	.47	1.0									
8. AIR-Y Negative Intensity	.39	.49	.53	.17	-.16	.42	.72	1.0								
9. EIS Negative	.30	.28	.42	.17	-.05	.39	.52	.60	1.0							
10. CERQ Self-Blame	.43	.35	.39	.18	-.05	.30	.40	.44	.31	1.0						
11. ... Acceptance	.13	-.03	.06	.02	-.12	.02	.03	.10	.11	.23	1.0					
12. ...Rumination	.31	.31	.42	.07	-.42	.40	.49	.47	.31	.46	.29	1.0				
13. ...Positive Refocusing	.03	.01	-.15	-.06	-.12	-.15	-.05	-.04	.03	.02	.26	.09	1.0			
14. ...Refocus on planning	-.04	-.11	-.27	-.31	-.40	-.15	-.11	-.06	-.15	.08	.29	.12	.46	1.0		
15. ...Positive Reappraisal	-.02	-.09	-.25	-.18	-.35	-.11	-.11	-.06	-.12	.06	.30	.13	.42	.69	1.0	
16. ...Putting into perspective	.03	-.17	-.21	-.07	-.26	-.05	-.11	-.02	.02	.09	.43	.10	.39	.44	.57	1.0
17. ...Catastrophizing	.31	.49	.58	.39	.09	.38	.53	.40	.31	.41	.08	.40	.07	.12	.16	.12
18. ...Blaming Others	.18	.34	.26	.05	-.05	.16	.39	.22	.12	.12	-.02	.24	.12	.09	.03	.07
19. CSI-SF Problem-solving	-.04	-.16	-.22	-.14	-.14	-.16	-.12	-.02	-.08	.01	.13	.05	.17	.37	.28	.26
20. ...Cogn. Restructuring	-.07	-.12	-.26	-.12	-.29	-.16	-.15	-.07	-.09	-.06	.21	.05	.27	.40	.50	.43
21. ...Express Emotions	.05	.13	.10	-.13	-.39	.10	.25	.27	.20	.07	.01	.32	.21	.23	.25	.07
22. ...Social Support	.03	-.02	-.05	-.21	-.41	-.02	.12	.17	.15	.12	.09	.25	.13	.29	.30	.14
23. ...Problem Avoidance	.16	.21	.20	.19	.10	.10	.13	.02	.06	.11	.13	.12	.01	.09	.03	.07
24. ...Wishful Thinking	.34	.18	.32	.20	.02	.27	.23	.16	.20	.17	.18	.23	.05	.11	.08	.03
25. ...Social Withdrawal	.28	.33	.40	.23	.08	.27	.32	.27	.24	.16	.14	.19	.06	.08	.04	.01
26. ...Self-Criticism	.37	.18	.25	.20	.12	.21	.15	.18	.14	.35	.20	.11	.02	.06	.06	.02
27. ERQ Suppression	.28	.07	.20	.31	.34	.03	-.02	-.06	-.04	.21	.15	.02	.05	.15	.08	.01
28. ...Cognitive Reappraisal	-.16	-.21	-.29	-.19	-.26	-.20	-.20	-.07	-.11	-.01	.22	.11	.39	.47	.40	.27

Measure subscale	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
29. PANAS Negative	.40	.42	.50	.29	.05	.34	.51	.43	.36	.39	.08	.37	.01	-.06	-.03	-.07
30. PANAS Positive	-.21	-.19	-.33	-.26	-.24	-.20	-.16	-.07	-.09	-.12	.11	-.01	.27	.37	.34	.20

Measure subscale	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.
17. CERQ Catastrophizing	1.0													
18. CERQ Blaming Others	.48	1.0												
19. CSI-SF Problem-Solving	-.07	-.02	1.0											
20. ...Cognitive Restructuring	-.11	-.07	.35	1.0										
21. ...Express Emotions	.08	.13	-.06	.28	1.0									
22. ...Social Support	-.01	.03	.05	.33	.70	1.0								
23. ...Problem Avoidance	.24	.20	-.34	.04	-.04	-.12	1.0							
24. ...Wishful Thinking	.29	.14	-.23	-.14	.10	.00	.41	1.0						
25. ...Social Withdrawal	.31	.22	.02	-.14	.01	-.16	.08	.37	1.0					
26. ...Self-Criticism	.17	.08	.01	-.08	-.10	-.16	.20	.41	.34	1.0				
27. ERQ Suppression	.18	.02	.00	-.14	-.39	-.36	.22	.10	.26	.28	1.0			
28. ERQ Cognitive Reappraisal	-.20	-.01	.20	.28	.14	.20	-.00	.01	-.07	-.03	-.11	1.0		
29. PANAS Negative	.41	.28	-.12	-.14	.09	.02	.14	.27	.29	.21	.12	-.12	1.0	
30. PANAS Positive	-.15	-.02	.26	.26	.17	.22	-.12	-.25	-.16	-.14	-.22	.32	-.07	1.0

Note. ERS=Emotion Reactivity Scale; AIR-Y=Affect Intensity and Reactivity Measure for Youth; EIS=Emotional Intensity Scale; ERQ=Emotion Regulation Questionnaire; REQ=Regulation of Emotions Questionnaire; DERS=Difficulties in Emotion Regulation Scale; CERQ=Cognitive Emotion Regulation Questionnaire; CSI=Coping Strategies Inventory; PANAS=Positive and Negative Affect Scales.

$r_s > .10$ were significant at $p < .05$; $r_s > .18$ were significant at $p < .001$.

Table 4

Summary of Factor Analyses for All Measures

Measure	Subscale	Cronbach's alpha	% items loading same as in original study ¹
ERQ (n = 697)	1. Cognitive reappraisal	.83	100%
	2. Emotional suppression	.76	
REQ (n = 351)	1. Internal dysfunctional	.64	95%
	2. External dysfunctional	.65	
	3. Internal functional	.63	
	4. External functional	.68	
CERQ (n = 302)	1. Positive reappraisal	.84	86%
	2. Rumination	.73	
	3. Other-blame	.81	
	4. Positive refocusing	.83	
	5. Putting into perspective	.82	
	6. Self-blame	.78	
	7. Acceptance	.66	
	8. Catastrophizing	.76	
	9. Refocus on planning	.74	
DERS (n = 653)	1. Strategies	.88	89%
	2. Nonacceptance	.91	
	3. Goals	.89	
	4. Impulse	.86	
	5. Awareness	.81	
	6. Clarity	.83	
CSI-LF (n = 114)	1. Problem-solving	.84	79%
	2. Cognitive restructuring	.89	
	3. Expressing emotions	.83	
	4. Social support	.90	
	5. Problem avoidance	.69	

Measure	Subscale	Cronbach's alpha	% items loading same as in original study ^J
CSI-SF (n = 304)	6. Wishful Thinking	.78	94%
	7. Self-criticism	.96	
	8. Social withdrawal	.86	
	1. Problem-solving	.87	
	2. Cognitive restructuring	.84	
	3. Expressing emotions	.88	
	4. Social support	.93	
	5. Problem avoidance	.67	
ERS (n = 689)	6. Wishful thinking	.66	100%
	7. Self-criticism	.92	
	8. Social withdrawal	.86	
	1. Total score	.93	
AIR-Y (n = 352)	Positivity (361)	.88	78%
	Negative Intensity (700)	.72	
	Negative Reactivity (373)	.62	
EIS (n = 354)	Positive (363)	.82	83%
	Negative (682)	.83	

Note. ERS=Emotion Reactivity Scale; AIR-Y=Affect Intensity and Reactivity Measure for Youth; EIS=Emotional Intensity Scale; ERQ=Emotion Regulation Questionnaire; REQ=Regulation of Emotions Questionnaire; CERQ=Cognitive Emotion Regulation Questionnaire; CSI=Coping Strategies Inventory; PANAS=Positive and Negative Affect Scales; DERS=Difficulties in Emotion Regulation Scale; Strategies=Limited access to emotion regulation strategies; Nonacceptance=Nonacceptance of emotional responses; Goals=Difficulties engaging in goal-directed behavior; Impulse=Impulse control difficulties; Awareness=Lack of emotional awareness; Clarity=Lack of emotional clarity.

^JThe percent of items loading the same as the original study referred to the percent of items that loaded onto the same subscale in our study as they did in the original validation exercise (e.g., if four items loaded onto the positive reappraisal scale in our study but the original validation study showed five items onto the scale, we reported that as 80%).

Table 5
Results of Two Oblique Exploratory Factor Analyses Using Full Information Maximum Likelihood

Measure subscale	Construct	Analysis with Study 1 measures ^a		Analysis with Study 2 and 3 measures ^b		
		Out-of-control Negative Emotion	Emotional Awareness and Expression	Out-of-control Negative Emotion	Emotional Awareness and Expression	Cognitive Strategies for EReg
DERS Strategies	Regulation	0.91	-0.13	0.82	0.18	-0.15
ERS Total	Reactivity	0.76	0.28	0.83	0.18	-0.15
AIR-Y Negative Intensity	Reactivity	0.64	0.49	0.76	-0.26	0.01
DERS Impulse	Regulation	0.74	-0.02	0.71	0.06	-0.10
DERS Nonacceptance	Regulation	0.66	-0.13	0.62	0.34	0.15
DERS Goals	Regulation	0.62	0.05	0.61	0.03	-0.11
REQ Internal-Dysfunctional	Regulation	0.71	-0.17	--	--	--
EIS Negative	Reactivity	0.51	0.36	0.59	-0.17	-0.04
PANAS Negative	Neg Affect	0.58	0.08	0.60	0.07	-0.04
CERQ Self-blame	Regulation/Coping	--	--	0.54	0.13	0.22
CERQ Rumination	Regulation/Coping	--	--	0.60	-0.19	0.23
CERQ Catastrophizing	Regulation/Coping	--	--	0.63	0.13	-0.02
CSIS Wishful Thinking	Coping	--	--	0.36	0.23	0.08
CSIS Social Withdrawal	Coping	--	--	0.42	0.27	0.09
EIS Positive	Reactivity	0.09	0.64	--	--	--
AIR-Y Positivity	Reactivity	0.07	0.62	--	--	--
DERS Awareness	Regulation	0.19	-0.57	-0.07	0.59	-0.25
ERQ Suppression	Regulation	0.22	-0.44	0.06	0.62	0.08
REQ External-Functional	Regulation	-0.15	0.55	--	--	--
AIR-Y Negative Reactivity	Reactivity	0.26	0.48	--	--	--
CSIS Social Support	Coping	--	--	0.13	-0.57	0.21
CSIS Express Emotions	Coping	--	--	0.27	-0.59	0.15
CERQ Positive Reappraisal	Regulation/Coping	--	--	-0.05	-0.05	0.78
CERQ Planning	Regulation/Coping	--	--	-0.07	-0.13	0.74
CERQ Putting into Perspective	Regulation/Coping	--	--	-0.03	0.11	0.68

Measure subscale	Construct	Analysis with Study 1 measures ^a			Analysis with Study 2 and 3 measures ^b		
		Out-of-control Negative Emotion	Emotional Awareness and Expression	Out-of-control Negative Emotion	Emotional Awareness and Expression	Cognitive Strategies for EReg	
CERQ_Positive Refocusing	Regulation/Coping	--	--	0.02	-0.05	0.56	
CERQ_Acceptance	Regulation/Coping	--	--	0.16	0.23	0.53	
CSIS_Cognitive Restructuring	Coping	--	--	-0.11	-0.14	0.52	
ERQ_Cognitive Reappraisal	Regulation	--	--	-0.15	-0.11	0.49	
CSL_Problem-Solving	Coping	--	--	-0.13	0.00	0.37	
DERS_Clarity	Regulation	0.5	-0.38	0.34	0.49	-0.09	
REQ_External-Dysfunctional	Regulation	0.34	-0.03	--	--	--	
ERQ_Cognitive Reappraisal	Regulation	-0.33	0.31	--	--	--	
REQ_Internal-Functional	Regulation	-0.3	0.3	--	--	--	
PANAS_Positive	Positive Affect	-0.34	0.38	-0.17	-0.24	0.33	
CSIS_Problem Avoidance	Coping	--	--	0.20	0.28	0.09	
CSIS_Self-Criticism	Coping	--	--	0.30	0.39	0.17	
CERQ_Blaming Others	Regulation/Coping	--	--	0.37	-0.03	0.04	
Correlations	Factor 1	1.00		1.00			
Correlations	Factor 2	0.10	1.00	0.08	1.00		
Correlations	Factor 3	--	--	-0.09	-0.22	1.00	

^aFIML enabled use of participants from Studies 2 and 3 for Study 1 variables that were also administered in Studies 2 and 3.

^bFIML enabled use of participants from Study 1 for Studies 2 and 3 variables that were also administered in Study 1

Note. ERS=Emotion Reactivity Scale; AIR-Y=Affect Intensity and Reactivity Measure for Youth; EIS=Emotional Intensity Scale; ERQ=Emotion Regulation Questionnaire; REQ=Regulation of Emotions Questionnaire; DERS=Difficulties in Emotion Regulation Scale; CERQ=Cognitive Emotion Regulation Questionnaire; CSI=Coping Strategies Inventory; PANAS=Positive and Negative Affect Scales.