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The Emotion Regulation Questionnaire: Psychometric Properties in General Community Samples

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Abstract

The Emotion Regulation Questionnaire (ERQ) is a 10-item self-report measure of two emotion regulation strategies; *cognitive reappraisal* and *expressive suppression*. It is a widely used measure of emotion regulation, however, its factor structure has rarely been examined outside of university student samples, and some authors have recently questioned its factorial validity in general community samples. In this study, we examine the psychometric properties of the ERQ (original English version) in three Australian general community samples (*N*s = 300, 400, 348). Confirmatory factor analyses in each sample demonstrated that the traditional 2-factor model (comprised of cognitive reappraisal and expressive suppression factors) was replicable and an excellent fit to the data. In all samples, ERQ cognitive reappraisal (α = .89-.90) and expressive suppression (α = .76-.80) scores had acceptable to excellent levels of internal consistency reliability. As expected, cognitive reappraisal scores were significantly negatively correlated with psychological distress and alexithymia, whereas expressive suppression scores were significantly positively correlated with psychological distress and alexithymia. We conclude that, similar to previous findings in student samples, the ERQ has strong psychometric properties in general community samples and can therefore be used confidently regardless of participants' student status.

The Emotion Regulation Questionnaire: Psychometric Properties in General Community Samples

People use various strategies to attempt to modify the trajectory of their emotions and such attempts constitute *emotion regulation* (Gross, 2015a). Successful emotion regulation plays a crucial part in mental health (Aldao et al., 2010), and emotion regulation problems are a risk factor for a range of psychiatric disorders, including affective (Rottenberg, Gross, & Gotlib, 2005), anxiety (Mennin & Farach, 2007), substance use (Fox, Axelrod, Paliwal, Sleeper, & Sinha, 2007), eating (Bydlowski et al., 2005) and personality disorders (Linehan, 1993). Researchers and clinicians therefore need valid measures of emotion regulation.

Several self-report questionnaires have been developed for this purpose (for a review, see John & Eng, 2014), with one of the most commonly used being the Emotion Regulation Questionnaire (ERQ; Gross & John, 2003). The ERQ was originally developed in English and has since been translated into 33 languages (see Stanford Psychophysiology Laboratory, 2018). To date though, few studies have formally examined the ERQ's factor structure outside of university student populations, and Spaapen, Waters, Brummer, Stopa and Bucks (2014) have recently argued that it needs modifications to have adequate factorial validity in general community samples.

In the present study, we examine the psychometric properties of the ERQ (original English version) in general community samples. Prior to reporting the results of our study, we firstly describe the ERQ, and summarise the results of existing studies that have examined its concurrent/criterion validity, internal consistency reliability, and factor structure.

Emotion Regulation Questionnaire

The ERQ is a 10-item self-report questionnaire based on Gross's (1998) process model of emotion regulation. This model categorises emotion regulation strategies based on how early they are activated in the emotion generation process, and hypothesises that different regulation strategies might have different consequences. The ERQ is designed to measure people's usage of two regulation strategies: an antecedent-focused strategy called *cognitive reappraisal* (6 items, e.g., "When I'm faced with a stressful situation, I make myself think about it in a way that helps me stay calm") where a person attempts to change how he or she thinks about a situation in order to change its emotional impact, and a response-focused strategy called *expressive suppression* (4 items, e.g., "I keep my emotions to myself") where a person attempts to inhibit the behavioural expression of his or her emotions (Gross & John, 2003). Separate scale scores are derived for these two regulation strategies. All items are answered on a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree), with higher scores indicating higher usage of that strategy.

Concurrent/Criterion Validity and Reliability of the ERQ

The process model of emotion regulation predicts that, when used habitually, cognitive reappraisal should generally have more beneficial outcomes than expressive suppression (John & Gross, 2004). Indeed, in many studies with participants from predominantly Western cultural backgrounds, high ERQ *cognitive reappraisal* scores have usually been associated with adaptive outcomes, such as lower levels of psychopathology symptoms (e.g., Badcock et al., 2011; Joormann & Gotlib, 2010), higher levels of positive affect (e.g., Balzarotti, Gross, & John, 2010; Preece, Becerra, & Campitelli, 2018) and better interpersonal functioning (e.g., Cabello, Salguero, Fernández-Berrocal, & Gross, 2013; Gross & John, 2003), whereas high *expressive suppression* scores have usually been associated with maladaptive outcomes in these same domains (for a review, see John & Eng, 2014). Such patterns have emerged across university student (e.g., Balzarotti et al., 2010; Gross & John, 2003), nonclinical community (e.g., Preece, Becerra, & Campitelli, 2018; Cabello et al., 2013) and clinical samples (e.g., Badcock et al., 2011; D'Avanzato, Joormann, Siemer, & Gotlib, 2013; Joormann & Gotlib, 2010; Svaldi, Griepenstroh, Tuschen-Caffier, & Ehring, 2012), though the extent to which these two strategies are “adaptive” or “maladaptive” does appear to vary based on some contextual factors, such as people’s cultural background or values. In samples with more Asian values, for example, expressive suppression appears to be less detrimental (Butler, Lee, & Gross, 2007; Soto, Perez, Kim, Lee, & Minnick, 2011; Su et al., 2015), and there is some evidence that cognitive reappraisal might be an ineffective strategy for some minority groups experiencing oppression (Perez & Soto, 2011; Soto et al., 2012). These results have been found regardless of whether these two strategies are operationalised using the ERQ or experimental paradigms (e.g., Butler et al., 2007; Gross, 2014), thus supporting the ERQ’s validity. Both ERQ scale scores have, moreover, frequently demonstrated acceptable levels of internal consistency reliability (Cronbach’s $\alpha \geq .70$) across a range of sample types and cultures (e.g., Balzarotti et al., 2010; Cabello et al., 2013; English & John, 2013; Gross & John, 2003; Spaapen et al., 2014; Wiltink et al., 2011). With respect to these particular psychometric markers, available evidence therefore suggests the ERQ performs well regardless of participants’ student status.

Factor Structure of the ERQ

The factorial validity of the ERQ has been less well studied. We identified twelve published studies (see Table 8.1) that have examined its factor structure, eight in university student samples and four in general community samples. The studies using university student samples have so far been conducted in US (Gross & John, 2003; Melka, Lancaster, Bryant, & Rodriguez, 2011; Moore, Zoellner, & Mollenholt, 2008), French (D’Argembeau & Van der Linden, 2006), German (Abler & Kessler, 2009; Sala et al., 2012), or Italian samples (Balzarotti et al., 2010; Sala et al., 2012), or have used combined data from 23 countries (Matsumoto et al., 2008). All these studies in university student samples have, to date, been broadly supportive of its intended 2-factor structure (i.e., items loading on separable “*cognitive reappraisal*” or “*expressive suppression*” factors), with exploratory factor analyses

(EFAs) or principal components analyses (PCAs) extracting these two factors (Abler & Kessler, 2009; Gross & John, 2003; D'Argembeau & Van der Linden, 2006; Matsumoto et al., 2008) and confirmatory factor analyses (CFAs; Balzarotti et al., 2010; Matsumoto et al., 2008; Melka et al., 2011; Moore et al., 2008; Sala et al., 2012) showing generally acceptable goodness-of-fit index values (based on commonly used fit index cut-off criteria like CFI [comparative fit index] ≥ .90 and RMSEA [root mean square error of approximation] ≤ .08; Bentler & Bonnet, 1980; Browne & Cudeck, 1992). The four available factor analytic studies in general community samples have, however, produced more mixed results in terms of fit index values (Cabello et al., 2013; John & Gross, 2004; Spaapen et al., 2014; Wiltink et al., 2011).

The first published factor analysis of the ERQ in a US community sample was an EFA involving older females (John & Gross, 2004), and the expected two factor solution was obtained. A later CFA in a German community sample using a German translation (Wiltink et al., 2011), however, found inadequate levels of fit for the traditional 2-factor model, because item 8 from the *cognitive reappraisal* scale cross-loaded (factor loadings > .40) on both factors. Though if this cross-loading was allowed in the model, adequate fit index values were achieved. Cabello et al. (2013) subsequently examined a Spanish translation (in a Spanish sample) using CFA and found adequate levels of model fit with no cross-loadings, thus suggesting that the cross-loading Wiltink et al. (2011) observed was likely unique to that German translation, rather than being present in all nonstudent samples. Indeed, the latest CFA study (Spaapen et al., 2014), which used the English ERQ in Australian and UK community samples, also reported no cross-loadings. Spaapen et al. (2014) did, however, find some fit index values below desired cut-offs. They reported that modification indices suggested that the error terms of item 1 ("When I want to feel more positive emotion [such as joy or amusement], I change what I'm thinking about") and item 3 ("When I want to feel less negative emotion [such as sadness or anger], I change what I'm thinking about") covaried in their data-sets.[20] Spaapen et al. (2014) subsequently retested the 2-factor model with item 3 removed (i.e., to remove the error term covariance), which produced excellent fit index values. Based on their findings, Spaapen et al. (2014, p.1, 7) argued that the "original ERQ factor structure was not supported", that the ERQ is "not ideal in its original form", and that an alternate 9-item version of the measure (with item 3 removed), which they call the ERQ-9, is "preferable [over the original ERQ] when measuring reappraisal and suppression in community samples".

[20] In a factor model, an item error term contains the variance in the item score that is not accounted for by the specified substantiative latent factors. A covariance between two item error terms therefore suggests that there is something similar about these items other than them both being markers of their specified latent factor (Gerbing & Anderson, 1984).

Table 8.1

A List of the Published Factor Analytic Studies of the Emotion Regulation Questionnaire.

Study	Language version(s)	Analysis	Sample type(s)
Gross & John (2003)	English	PCA	US university students (*N*s=791, 336, 240, 116)
John & Gross (2004)	English	EFA	US general community (*N*=106)
D'Argembeau & Van der Linden (2006)	French	PCA	French university students (*N*=102)
Matsumoto et al. (2008)	Various	CFA/EFA	University students from various countries (*N*=3018)
Moore et al. (2008)	English	CFA	US university students and trauma-exposed community (*N*=359)
Abler & Kessler (2009)	German	EFA	German university students (*N*s=113,167,174)
Balzarotti et al. (2010)	Italian	CFA	Italian university students (*N*=416)
Melka et al. (2011)	English	CFA	US university students (*N*=1188)
Wiltink et al. (2011)	German	CFA	German general community (N=2524)
Sala et al. (2012)	Italian or German	CFA	Italian or German university students (Ns= 127, 174)
Cabello et al. (2013)	Spanish	CFA	Spanish general community (N=866)
Spaapen et al. (2014)	English	CFA	Australian or UK general community (*N*s=550, 483)

Note. PCA = principal components analysis, EFA = exploratory factor analysis, CFA = confirmatory factor analysis. Moore et al.'s (2008) sample was primarily comprised of university students (81.3%) so we categorise it as a university student sample when discussing Moore et al.'s results in text. In terms of the CFA estimation methods used, maximum likelihood (ML) was the most common method, either as normal theory ML (Melka et al., 2011; Wiltink et al., 2011) or Satorra and Bentler's robust ML (Cabello et al., 2013; Balzarotti et al., 2010). Other CFA studies used asymptotic distribution free estimation (Spaapen et al., 2014), weighted least squares mean and variance adjusted estimation (Sala et al., 2012), or did not report the estimation method (Matsumoto et al., 2008).

As such, there is presently some contention about the suitability of using the ERQ outside of student samples. We, however, do not think that the existing body of evidence presently warrants the removal of item 3. We believe that further research is required, particularly since in three of the four factor analytic studies conducted in community samples, the removal of item 3 was not required to achieve good fit index values or an adequate 2-factor solution (Cabello et al. 2013; John & Gross, 2004; Wiltink et al., 2011) and, in the samples of Spaapen et al. (2014), removing item 3 reduced the internal consistency reliability of the *cognitive reappraisal* scale. Moreover, researchers generally agree that fit index cut-offs should not be used in isolation as "golden rules" for accepting or rejecting a model (e.g., Bagby et al., 2007; Marsh et al., 2004; Preece et al., 2017). This view extends to those authors who initially introduced these fit index cut-offs (e.g., Bentler & Bonnet, 1980; Hu & Bentler, 1998). Hu and Bentler (1998, p. 449) note, for example, that "it is difficult to designate a specific cutoff value for each fit index because it does not work equally well with various types of fit indices, sample sizes, estimators, or distributions", and Bagby et al. (2007, p. 260) similarly highlight that "absolute cut-off values for establishing fit are only rough markers for establishing the fit of a model. What is important in model testing is that different procedures to assess fit converge on more or less good fits across multiple samples". Thus, whilst more factor analytic research in community samples is needed, we think that the ERQ's traditional 2-factor model has, on balance, so far fulfilled this criterion.

Factor structure is also only one of many markers of validity that must be considered when evaluating the ERQ's utility, and from a content validity perspective, item 3 has an important role within the measure. This is because item 3 is the only ERQ item that defines the term negative emotion for respondents. Consequently, if item 3 is removed, this definition needs to be moved to another item, and it is presently unclear (i.e., untested) what psychometric impact this might have. Items 1 and 3 are also not directly interchangeable, because item 1 refers to up-regulating positive emotions, whereas item 3 refers to down-regulating negative emotions. People regulate both negative and positive emotions (e.g., Becerra et al., 2017; Preece, Becerra, Robinson, Dandy, & Allan, 2018b; Quoidbach, Berry, Hansenne, & Mikolajczak, 2010), so if item 3 is removed, this reduces the breadth of the construct assessed by the *cognitive reappraisal* scale. In sum then, if psychometric investigations can demonstrate that the 10-item ERQ functions adequately in nonstudent samples, we think it is preferable for item 3 to be retained.

The Present Study

The goal of the present study was to examine the psychometric properties of the 10-item ERQ. We examined its factor structure, concurrent validity, and internal consistency reliability in three Australian general community samples (*N* = 300, 400, 348). The three samples were examined separately, rather than being combined, so that we could more fully examine the replicability of the ERQ's psychometric performance. Concurrent validity was examined against some established measures of psychological distress (Depression Anxiety Stress Scales-21 [DASS-21]; Lovibond & Lovibond, 1995) or alexithymia (20-item Toronto Alexithymia Scale [TAS-20]; Bagby et al., 1994). Because depressive and anxiety disorders are characterised by emotion regulation problems (Rottenberg et al., 2005), we expected that, similar to other samples from countries with predominantly Western cultural backgrounds (e.g., Gross & John, 2003), people with a more maladaptive emotion regulation profile on the ERQ (i.e., low use of *cognitive reappraisal*, high use of *expressive suppression*) would report higher levels of psychological distress on the DASS-21. Similarly, because people with high levels of alexithymia have difficulty processing their emotions, alexithymia is a crucial rate-limiting factor for successful emotion regulation (Gross, 2014; Preece et al., 2017), so we expected that people with a more maladaptive emotion regulation profile on the ERQ would report higher levels of alexithymia on the TAS-20.

Method

Participants and procedure. All three samples (sample A, *N* = 300; sample B, *N* = 400; sample C, *N* = 348)[21] completed the ERQ as part of a battery of psychological questionnaires administered in an online anonymous survey. All participants were recruited by an online survey recruiting company (Qualtrics panels) who attempted to recruit samples

[21] In all three samples, some additional participants also completed the online survey. However, their data were excluded during quality screening because they failed an attention check question (which asked them to select a specific point on the Likert scale) or completed the survey impossibly quickly (at a rate of <2 seconds per question, suggesting inattentive responding). Across samples A, B, and C, data from 65 participants were excluded.

of adults representative of the general community in Australia.[22] Demographic information for each sample is presented in Table 8.2.

Table 8.2

Sample Demographics

	Sample A (N = 300)		Sample B (N = 400)		Sample C (N = 348)	
Variable	Frequency	%	Frequency	%	Frequency	%
Age (years)	M = 51.59, SD = 15.54, range = 18-82	-	M = 49.27 SD = 16.55 range = 18-88	-	M = 45.62 SD = 17.92 range = 18-83	-
Gender						
Male	139	46.3	156	39.0	124	35.6
Female	161	53.7	244	61.0	224	64.4
Highest level of education completed						
Primary school	1	0.3	5	1.3	6	1.7
Year 10 high school	54	18.0	62	15.5	54	15.5
Year 12 high school	52	17.3	72	18.0	89	25.6
Technical diploma	127	42.3	153	38.3	106	30.5
University Bachelor's degree	49	16.3	82	20.5	73	21
University postgraduate degree	17	5.7	26	6.5	20	5.7
Current university student						
Yes	16	5.3	30	7.5	40	11.5
No	284	94.7	370	92.5	308	88.5
Place of birth						
Australia	-	-	306	76.5	258	74.1
United Kingdom	-	-	35	8.8	31	8.9
Asia	-	-	22	5.5	22	6.3
New Zealand	-	-	15	3.8	9	2.6
Continental Europe	-	-	13	3.3	17	4.9
Other	-	-	9	2.3	11	3.2
Primary language spoken at home						
English	280	93.3	-	-	-	-
Other	20	6.7	-	-	-	-

Note. A small portion of people within each sample were university students; these students were retained within the samples because the proportion of students was quite small and, in a cross-section of a community, a portion of people are likely to be studying at university (Australian Bureau of Statistics, 2017a). If these university students were excluded from the samples, the pattern of results reported in the results section did not change.

[22] Qualtrics panels recruit from multiple sources, primarily actively managed market research panels (see Qualtrics, 2014). Participants are sent an email inviting them to complete the online survey.

Materials. In sample A, the questionnaire battery included the ERQ, the DASS-21, and the TAS-20. In samples B and C, the questionnaire battery included the ERQ and DASS-21.

Depression Anxiety Stress Scales-21. The DASS-21 (Lovibond & Lovibond, 1995) is a 21-item self-report measure of psychopathology symptoms experienced in the past week. Three scale scores can be derived, corresponding to *depression* (7 items), *anxiety* (7 items) and *stress* (7 items) symptoms. All 21 items can also be summed into a *total scale* score as an overall marker of psychological distress. Items are answered on a 4-point Likert scale, with higher scores indicating more severe symptomatology. DASS-21 scores have demonstrated good validity and reliability (e.g., Kia-Keating et al., 2017).

Toronto Alexithymia Scale-20. The TAS-20 (Bagby et al., 1994) is a 20-item self-report measure of alexithymia. It is designed to assess the three components of alexithymia: *difficulty identifying one's own feelings* (*DIF*; 7 items), *difficulty describing feelings* (*DDF*; 5 items), and an *externally orientated thinking style* (*EOT*; 8 items) whereby one rarely pays attention to their emotions. Subscale scores can be derived for each component, and all items can be summed into a *total scale* score as an overall marker of alexithymia. Items are answered on a 5-point Likert scale, with higher scores indicating higher levels of alexithymia (i.e., more emotion processing difficulties). Most aspects of the TAS-20 have demonstrated good validity and reliability, though the *EOT* subscale score usually has low reliability (Cronbach's $\alpha < .70$; e.g., Preece, Becerra, Robinson, & Dandy, 2018) and this was found in our data-set.

Analytic strategy. Analyses were conducted in each sample separately. LISREL 8.80 software was used to conduct the CFAs, and SPSS 24 was used for all other analyses. Scores for the ERQ items were reasonably normally distributed (sample A, max skew = -.58, max kurtosis = -.87; sample B, max skew = -.70, max kurtosis = -.92; sample C, max skew = -.78, max kurtosis = -.99).

Factor structure. CFAs were conducted using maximum likelihood estimation (ML) based on a Pearson covariance matrix. As recommended by Curran et al. (1996), we calculated and reported results for both *normal theory ML* and Satorra and Bentler's (1994) *robust ML* (RML). RML uses a scaled χ^2 statistic (SBχ^2) and performs better than ML when the data are not perfectly normally distributed (Curran et al., 1996; Han et al., 2009). Two models were tested for each sample (see Figure 8.1): (1) The traditional "2-factor model", where items 1, 3, 5, 7, 8 and 10 were specified to load on a "*cognitive reappraisal*" factor, and items 2, 4, 6 and 9 were specified to load on an "*expressive suppression*" factor. These two factors were allowed to correlate. No item cross-loadings or error term covariances were specified. (2) A variant of the 2-factor model ("2-factor model+cov"), informed by the findings of Spaapen et al. (2014), whereby the error terms of item 1 and item 3 were allowed to covary.

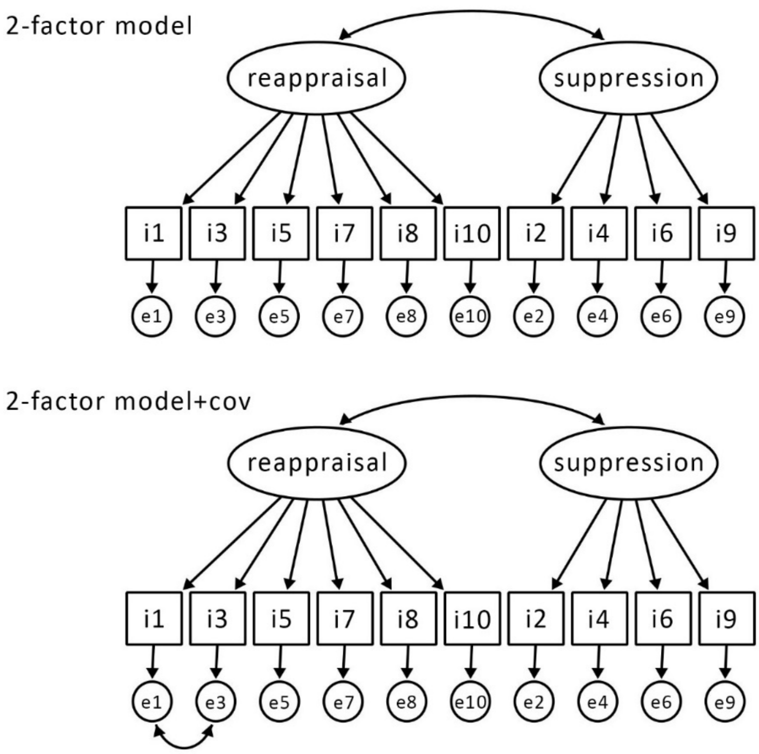

Figure 8.1. The confirmatory factor analysis models examined for each sample. Ellipses represent latent factors, squares represent observed variables. Reappraisal = cognitive reappraisal, suppression = expressive suppression, i = item, e = error term.

Model goodness-of-fit was evaluated via the χ^2 statistic (or SBχ^2) and four fit indexes: CFI, NFI (normed fit index), RMSEA, and SRMR (standardised root mean square residual). A non-significant (p>.05) χ^2 statistic suggests excellent fit, however in large sample sizes χ^2 can over-reject models that are parsimonious and a reasonable approximation of the data (see Browne & Cudeck, 1992; Schumacker & Lomax, 2004). We therefore relied primarily on CFI, NFI, RMSEA and SRMR. CFI and NFI values around $\geq$.90 were judged to indicate acceptable fit and values around $\geq$.95 excellent fit. RMSEA and SRMR values around $\leq$ .08 were judged to indicate acceptable fit and values around $\leq$ .06 excellent fit (Bentler & Bonnet, 1980; Browne & Cudeck, 1992; Kline, 2005; Marsh et al., 2004). To directly compare the fit of the models the Akaike information criterion (AIC) was also used. AIC penalises model complexity and lower AIC values indicate better fit (Byrne, 2013). Factor loadings $\geq$.40 were considered meaningful loadings (Stevens, 1992).

Internal consistency reliability. Cronbach's alpha internal reliability coefficients were calculated for the ERQ *cognitive reappraisal* and *expressive suppression* scale scores. Reliability coefficients $\geq$.70 were judged to indicate acceptable reliability, $\geq$.80 good reliability, and $\geq$.90 excellent reliability (Groth-Marnat, 2009).

Concurrent validity. In sample A, Pearson correlations were calculated between ERQ scores and DASS-21/TAS-20 scores. In the other two samples, Pearson correlations were calculated between ERQ scores and DASS-21 scores.

Results

Descriptive statistics for the administered measures are displayed in Table 8.3.

Table 8.3

Descriptive Statistics and Cronbach's Alpha (α) Reliability Coefficients for the Administered Measures.

	Sample A (*N*=300)			Sample B (*N*=400)			Sample C (*N*=348)		
Measure/subscale	*M*	*SD*	α	*M*	*SD*	α	*M*	*SD*	α
ERQ									
Cognitive reappraisal	29.00	6.68	.89	28.97	7.09	.89	28.61	7.32	.90
Expressive suppression	15.97	5.16	.79	15.69	5.41	.80	15.88	5.14	.76
DASS-21									
Total scale	13.44	13.70	.96	16.13	14.97	.96	16.79	14.76	.96
Depression	4.73	5.52	.94	5.63	5.83	.94	6.14	5.96	.93
Anxiety	3.63	4.31	.87	4.43	4.94	.90	4.36	4.74	.88
Stress	5.09	4.94	.94	6.07	5.41	.92	6.28	5.36	.91
TAS-20									
Total scale	48.96	12.24	.87	-	-	-	-	-	-
DIF	15.10	6.13	.88	-	-	-	-	-	-
DDF	13.16	4.75	.83	-	-	-	-	-	-
EOT	20.70	4.25	.54	-	-	-	-	-	-

Note. ERQ = Emotion Regulation Questionnaire, DASS-21 = Depression Anxiety Stress Scales-21, TAS-20 = 20-item Toronto Alexithymia Scale, DIF = Difficulty identifying feelings, DDF = Difficulty describing feelings, EOT = Externally orientated thinking. The TAS-20 was not administered in samples B or C.

Factor structure. CFAs of the ERQ items produced a similar pattern of results in all three samples (for CFA fit index values see Table 8.4, for CFA factor loadings and factor intercorrelations see Table 8.5). The pattern of results was similar across ML and RML analyses, so we summarise only the RML results here. The traditional 2-factor model was an excellent fit according to all examined fit indexes (i.e., $SB\chi^2$, CFI, NFI, RMSEA, and SRMR), suggesting that this model was a good representation of the data in all three data-sets. All items loaded well on their intended factor. Allowing the error terms of item 1 and item 3 to covary (i.e., 2-factor model+cov) slightly improved fit index values in all three samples. However, because model fit was already excellent without this modification, the more parsimonious traditional 2-factor model was our preferred solution.

Table 8.4

Goodness-of-fit Index Values from Confirmatory Factor Analyses (RML and ML) of the Emotion Regulation Questionnaire Items

Model	χ^2 or SBχ^2 (*df*)	*p*	CFI	NFI	RMSEA (90% CI)	SRMR	AIC
			Sample A (*N* = 300)				
RML							
2-factor model	14.558(34)	.999	1.00	.993	.000(.000-.000)	.0492	56.558
2-factor model+cov	11.396(33)	1.00	1.00	.994	.000(.000-.000)	.0453	55.396
ML							
2-factor model	89.607(34)	<.001	.972	.956	.0731(.0546-.0920)	.0492	130.275
2-factor model+cov	66.132(33)	<.001	.983	.967	.0595(.0391-.0796)	.0453	111.902
			Sample B (*N* = 400)				
RML							
2-factor model	9.869(34)	1.00	1.00	.996	.000(.000-.000)	.0670	51.869
2-factor model+cov	5.809(33)	1.00	1.00	.998	.000(.000-.000)	.0587	49.809
ML							
2-factor model	165.878(34)	<.001	.952	.941	.094(.0795-.110)	.0670	196.684
2-factor model+cov	93.069(33)	<.001	.978	.967	.0653(.0492-.0818)	.0587	133.161
			Sample C (*N* = 348)				
RML							
2-factor model	8.499(34)	1.00	1.00	.996	.000(.000-.000)	.0550	50.499
2-factor model+cov	6.798(33)	1.00	1.00	.997	.000(.000-.000)	.0513	50.798
ML							
2-factor model	107.857(34)	<.001	.969	.955	.0796(.0631-.0966)	.0550	150.692
2-factor model+cov	80.559(33)	<.001	.980	.966	.0659(.0483-.0838)	.0513	126.668

Note. RML = Satorra and Bentler's (1994) robust maximum likelihood estimation, ML = maximum likelihood estimation, CFI = comparative fit index, NFI = normed fit index, RMSEA = root mean square error of approximation, SRMR = standardised root mean residual, AIC = Akaike information criterion, CI = confidence interval.

Table 8.5

Completely Standardised Factor Loadings from Confirmatory Factor Analyses of the Emotion Regulation Questionnaire Items

	Sample A		Sample B		Sample C	
Item number/scale	F1	F2	F1	F2	F1	F2
Cognitive reappraisal						
1-When I want to feel more *positive* emotion (such as joy or amusement), I *change what I'm thinking about*.	.66	-	.60	-	.65	-
3-When I want to feel less *negative* emotion (such as sadness or anger), I *change what I'm thinking about*.	.70	-	.65	-	.70	-
5-When I'm faced with a stressful situation, I make myself *think about it* in a way that helps me stay calm.	.62	-	.65	-	.67	-
7-When I want to feel more *positive* emotion, I *change the way I'm thinking* about the situation.	.87	-	.91	-	.87	-
8-I control my emotions by *changing the way I think* about the situation I'm in.	.88	-	.91	-	.87	-
10-When I want to feel less *negative* emotion, I *change the way I'm thinking* about the situation.	.83	-	.81	-	.84	-
Expressive suppression						
2-I keep my emotions to myself.	-	.78	-	.72	-	.70
4-When I am feeling *positive* emotions, I am careful not to express them.	-	.56	-	.65	-	.48
6-I control my emotions by *not expressing them*.	-	.83	-	.82	-	.82
9-When I am feeling *negative* emotions, I make sure not to express them.	-	.61	-	.65	-	.67

Note. Loadings are displayed for the traditional 2-factor model (robust maximum likelihood estimation). All factor loadings were statistically significant, $p < .001$. The estimated correlation between the two factors was .09 in sample A ($p > .05$), .12 ($p > .05$) in sample B, and .15 ($p > .05$) in sample C.

Internal consistency reliability and concurrent validity. In all three samples, the ERQ *cognitive reappraisal* (α_{range} = .89-.90) and *expressive suppression* (α_{range} = .76-.80) scale scores had acceptable to excellent levels of internal consistency reliability (see Table 8.3). The ERQ scores also correlated with scores from the DASS-21 or TAS-20 as expected. *Expressive suppression* scores were significantly ($p < .05$) positively correlated with psychological distress (sample A, r = .20; sample B, r = .18; sample C, r = .13) and alexithymia (sample A, r = .41). *Cognitive reappraisal* scores were significantly ($p < .01$)

negatively correlated with psychological distress (sample A, *r* = -.19; sample B, *r* = -.30; sample C, *r* = -.27) and alexithymia (sample A, *r* = -.19).

In sum, the ERQ performed similarly across these three data-sets, and performed well on every marker of validity and reliability that we tested.

Discussion

Our purpose in this study was to examine the psychometric properties of the 10-item ERQ in general community samples. Overall, it performed well on every marker of validity and reliability that we tested.

The ERQ's factor structure was replicable and consistent with its theoretical basis in our CFAs. The traditional 2-factor model displayed excellent goodness-of-fit across three different Australian community samples. Our findings across these three data-sets are therefore consistent with the results of most existing factor analytic studies, which have supported the traditional 2-factor model in mostly university student samples (e.g., Balzarotti, Gross, & John, 2010; Gross & John, 2003; Matsumoto et al., 2008). Like Spaapen et al.'s (2014) results in their Australian or UK community samples, there was a covariance between the error terms of ERQ items 1 and 3 in our data-sets, but unlike Spaapen et al.'s results, it did not *need* to be added into the model for fit index cut-off values to be reached. Even if this error term covariance is added into the model though, many researchers agree that the presence of a few error term covariances in a model, practically speaking, often has little impact on a measure's utility, and such error term covariances are frequently added into models when these covariances are theoretically justified (e.g., Aldao & Nolen-Hoeksema, 2010; Bagby et al., 2007; Gerbing & Anderson, 1984; Gullone & Taffe, 2011; Matsumoto et al., 2008; Podsakoff et al., 2003; Preece et al., 2017). Error term covariances, for example, may reflect a method effect that is caused by similarities in item wording or sentence structure (Podsakoff et al., 2003). We think this is likely the case here, as ERQ items 1 and 3 are unique from the rest of the items, in that both these items include the phrase "…I change what I'm thinking about" and both include a bracketed section that defines the terms negative or positive emotion. Whilst the error terms of these two ERQ items are therefore likely to covary, this does not exclude these items from contributing unique and useful variance to the "*cognitive reappraisal*" factor score (Podsakoff et al., 2003); indeed, in our data-sets, and all other published factor analyses (e.g., John & Gross, 2004; Spaapen et al., 2014), ERQ items 1 and 3 both load strongly (factor loadings > .40) on the "*cognitive reappraisal*" factor. Available community data therefore appear to support the factorial validity of the ERQ.

The ERQ *cognitive reappraisal* and *expressive suppression* scale scores also correlated in expected ways with scores from established measures of psychological distress (DASS-21; Lovibond & Lovibond, 1995) or alexithymia (TAS-20; Bagby et al., 1994) in our data-sets, and had acceptable to excellent levels of internal consistency reliability. Taken alongside the large body of similar findings from mostly university student samples (e.g., Gross & John, 2003; Matsumoto et al., 2008), our findings therefore suggest that the ERQ may be used confidently regardless of participants' student status. Because ERQ item 3 is important from a content validity perspective, we think on balance it is hence preferable for researchers and practitioners to continue using the ERQ in its traditional 10-item form (Gross & John, 2003), rather than Spaapen et al.'s (2014) modified and less well tested 9-item version.

One limitation of our study, however, is that our results only apply to the English version of the ERQ, and to samples from a country with a predominantly Western cultural background (Australian Bureau of Statistics, 2017b).[23] In university student samples, the ERQ's factor structure has generally performed similarly across various cultural groups and

[23] We did not collect data on the ethnicity or cultural values of our participants, however, our collected birthplace data was similar to recent Australian census data (Australian Bureau of Statistics, 2017b), whereby most participants reported being born in Australia or the UK.

language versions (see Matsumoto et al., 2008), but further research is needed to examine whether this is also the case for community samples. More factor analytic work in Asian community samples would be useful, for example, given that the consequences of expressive suppression appear to be different in this group (Soto et al., 2011; Su et al., 2015). Our results also only apply to nonclinical samples. Most forms of validity and reliability have already been established in clinical samples (e.g., Badcock et al., 2011; Joormann & Gotlib, 2010), but the ERQ's factor structure has not yet been examined. Factorial invariance testing across clinical, community, and university student samples would hence be beneficial.

Whilst further work is therefore needed to confirm our findings across different population types, available evidence presently suggests that the ERQ has strong validity and reliability regardless of participants' student status.

References

Abler, B. & Kessler, H. (2009). Emotion Regulation Questionnaire - Eine deutsche Fassung des ERQ von Gross & John. *Diagnostica*, *55*, 144–152.

Aldao, A., & Christensen, K. (2015). Linking the expanded process model of emotion regulation to psychopathology by focusing on behavioral outcomes of regulation *Psychological Inquiry*, *26*, 27–36.

Aldao, A., Gee, D. G., De Los Reyes, A., & Seager, I. (2016). Emotion regulation as a transdiagnostic factor in the development of internalizing and externalizing psychopathology: Current and future directions. *Development and Psychopathology*, *28*, 927-946.

Aldao, A., & Nolen-Hoeksema, S. (2010). Specificity of cognitive emotion regulation strategies: A transdiagnostic examination. *Behaviour Research and Therapy*, *48*, 974-983.

Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review*, *30*, 217-237.

Aldao, A., Sheppes, G., & Gross, J. J. (2015). Emotion regulation flexibility. *Cognitive Therapy and Research*, *39*, 263–278.

American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.

Amodio, D. M., Master, S. L., Yee, C. M., & Taylor, S. E. (2008). Neurocognitive components of the behavioral inhibition and activation systems: Implications for theories of self-regulation. *Psychophysiology*, *45*, 11–19.

Australian Bureau of Statistics. (2016). *Education and work, Australia* (no. 6227.0). Retrieved from http://www.abs.gov.au/ausstats/abs@.nsf/mf/6227.0.

Australian Bureau of Statistics. (2017a). *2016 Census Data Summary: Education qualifications in Australia*. Retrieved from http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/2071.02016?OpenDocument

Australian Bureau of Statistics. (2017b). *2016 Census data summary: Cultural diversity in Australia*. Retrieved from http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/2071.02016?OpenDocument

Bach, M., Bach, D., De Zwaan, M., Serim, M., & Böhmer, F. (1996). Validation of the German version of the 20-item Toronto alexithymia scale in normal persons and psychiatric patients. *Psychotherapie, Psychosomatik, Medizinische Psychologie*, *46*, 23–28.

Bachorowski, J. A., & Braaten, E. B. (1994). Emotional intensity: Measurement and theoretical implications. *Personality and Individual Differences*, *17*, 191-199.

Badcock, J. C., Paulik, G., & Maybery, M. T. (2011). The role of emotion regulation in auditory hallucinations. *Psychiatry Research*, *185*, 303-308.

Bagby, R. M., Parker, J. D., & Taylor, G. J. (1994). The twenty-item Toronto alexithymia scale—I. Item selection and cross-validation of the factor structure. *Journal of Psychosomatic Research*, *38*, 23–32.

Bagby, R. M., Quilty, L. C., Taylor, G. J., Grabe, H. J., Luminet, O., Verissimo, R., ... Vanheule, S. (2009). Are there subtypes of alexithymia? *Personality and Individual Differences*, *47*, 413–418.

Bagby, R. M., Taylor, G. J., Parker, J. D., & Dickens, S. E. (2006). The development of the Toronto structured interview for alexithymia: Item selection, factor structure, reliability and concurrent validity. *Psychotherapy and Psychosomatics*, *75*, 25–39.

Bagby, R. M., Taylor, G. J., Quilty, L. C., & Parker, J. D. (2007). Reexamining the factor structure of the 20-item Toronto alexithymia scale: Commentary on Gignac, Palmer, and Stough. *Journal of Personality Assessment*, *89*, 258–264.

Bailey, P. E., & Henry, J. D. (2007). Alexithymia, somatization and negative affect in a community sample. *Psychiatry Research*, *150*, 13–20.

Balzarotti, S., Gross, J. J., & John, O. P. (2010). An Italian adaptation of the Emotion Regulation Questionnaire. *European Journal of Psychological Assessment*, *26*, 61–67.

Bankier, B., Aigner, M., & Bach, M. (2001). Alexithymia in DSM-IV disorder: Comparative evaluation of somatoform disorder, panic disorder, obsessive-compulsive disorder, and depression. *Psychosomatics*, *42*, 235–240.

Bardeen, J. R., Fergus, T. A., & Orcutt, H. K. (2012). An examination of the latent structure of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment*, *34*, 382–392.

Bardeen, J. R., Fergus, T. A., Hannan, S. M., & Orcutt, H. K. (2016). Addressing psychometric limitations of the difficulties in emotion regulation scale through item modification. *Journal of Personality Assessment*, *98*, 298–309.

Barlow, D. H., Farchione, T. J., Bullis, J. R., Gallagher, M. W., Murray-Latin, H., Sauer-Zavala, S., ... & Ametaj, A. (2017). The unified protocol for transdiagnostic treatment of emotional disorders compared with diagnosis-specific protocols for anxiety disorders: A randomized clinical trial. *JAMA Psychiatry*, *74*, 875-884.

Barlow, D. H., Farchione, T. J., Fairholme, C. P., Ellard, K. K., Boisseau, C. L., Allen, L. B., & May, J. T. E. (2010). *Unified protocol for transdiagnostic treatment of emotional disorders: Therapist guide*. New York, NY: Oxford University Press.

Barrett, L. F. (2009). The future of psychology: Connecting mind to brain. *Perspectives in Psychological Science*, *4*, 326–339.

Barrett, L. F., Gross, J., Christensen, T. C., & Benvenuto, M. (2001). Knowing what you're feeling and knowing what to do about it: Mapping the relation between emotion differentiation and emotion regulation. *Cognition and Emotion*, *15*, 713–724.

Bausch, S., Stingl, M., Hartmann, L. C., Leibing, E., Leichsenring, F., Kruse, J., ... Leweke, F. (2011). Alexithymia and script driven emotional imagery in healthy female subjects: No support for deficiencies in imagination. *Scandinavian Journal of Psychology*, *52*, 179–184.

Becerra, R., & Campitelli, G. (2013). Emotional reactivity: Critical analysis and proposal of a new scale. *International Journal of Applied Psychology*, *3*, 161–168.

Becerra, R., Amos, A., & Jongenelis, S. (2002). Organic alexithymia: A study of acquired emotional blindness. *Brain Injury*, *16*, 633–645.

Becerra, R., Cruise, K., Murray, G., Bassett, D., Harms, C., Allan, A., & Hood, S. (2013). Emotion regulation in bipolar disorder: Are emotion regulation abilities less compromised in euthymic bipolar disorder than unipolar depressive or anxiety disorders? *Open Journal of Psychiatry*, *3*, 1–7.

Becerra, R., Preece, D., Campitelli, G., & Scott-Pillow, G. (2017). The assessment of emotional reactivity across negative and positive emotions: Development and validation of the Perth Emotional Reactivity Scale (PERS). *Assessment*, 1-13. doi: 10.1177/1073191117694455

Beck, A. T., & Dozois, D. J. (2011). Cognitive therapy: Current status and future directions. *Annual Review of Medicine*, *62*, 397-409.

Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, *88*, 588–606.

Berenbaum, H. (1996). Childhood abuse, alexithymia and personality disorder. *Journal of Psychosomatic Research*, *41*, 585–595.

Bermond, B., Clayton, K., Liberova, A., Luminet, O., Maruszewski, T., Ricci Bitti, P. E., & Wicherts, J. (2007). A cognitive and an affective dimension of alexithymia in six languages and seven populations. *Cognition and Emotion*, *21*, 1125–1136.

Bermond, B., Oosterveld, P., & Vorst, H. C. M. (2015). Measures of alexithymia. In G. J. Boyle, D. H. Saklofske, & G. Matthews (Eds.), *Measures of personality and social psychological constructs* (pp. 227–256). San Diego: Academic.

Bermond, B., Vorst, H. C., Vingerhoets, A. J., & Gerritsen, W. (1999). The Amsterdam alexithymia scale: Its psychometric values and correlations with other personality traits. *Psychotherapy and Psychosomatics*, *68*, 241–251.

Bilotta, E., Giacomantonio, M., Leone, L., Mancini, F., & Coriale, G. (2015). Being alexithymic: Necessity or convenience. Negative emotionality× avoidant coping interactions and alexithymia. *Psychology and Psychotherapy: Theory, Research and Practice*, *89*, 261-275.

Bonanno, G. A., & Burton, C. L. (2013). Regulatory flexibility: An individual differences perspective on coping and emotion regulation. *Perspectives on Psychological Science*, *8*, 591–612.

Boss, A. D., & Sims, H. P. (2008). Everyone fails! Using emotion regulation and self-leadership for recovery. *Journal of Managerial Psychology*, *23*, 135-150.

Boyes, M. E., Carmody, T. M., Clarke, P. J., & Hasking, P. A. (2017). Emotional reactivity and perseveration: Independent dimensions of trait positive and negative affectivity and differential associations with psychological distress. *Personality and Individual Differences*, *105*, 70-77.

Brackett, M. A., Rivers, S. E., & Salovey, P. (2011). Emotional intelligence: Implications for personal, social, academic, and workplace success. *Social and Personality Psychology Compass*, *5*, 88-103.

Bradley, M. M., & Lang, P. J. (2007). The international affective picture system (IAPS) in the study of emotion and attention. In J. A. Coan, & J. J. B. Allen (Eds.). *Handbook of emotion elicitation and assessment* (pp. 29–46). New York, NY: Oxford University Press.

Bressi, C., Taylor, G., Parker, J., Bressi, S., Brambilla, V., Aguglia, E., et al. (1996). Cross validation of the factor structure of the 20-item Toronto alexithymia scale: An Italian multicenter study. *Journal of Psychosomatic Research*, *41*, 551–559.

Brown, T. A. (2007). Temporal course and structural relationships among dimensions of temperament and DSM-IV anxiety and mood disorder constructs. *Journal of Abnormal Psychology*, *116*, 313-328.

Brown, T. A. (2014). *Confirmatory factor analysis for applied research*. New York: Guilford Publications.

Brown, T. A., Chorpita, B. F., & Barlow, D. H. (1998). Structural relationships among dimensions of the DSM-IV anxiety and mood disorders and dimensions of negative affect, positive affect, and autonomic arousal. *Journal of Abnormal Psychology*, *107*, 179-192.

Browne, M. W., & Cudeck, R. (1992). Alternate ways of assessing model fit. *Sociological Methods & Research*, *21*, 230–258.

Bucci, W. (1997). Symptoms and symbols: A multiple code theory of somatization. *Psychoanalytic Inquiry*, *17*, 151–172.

Bullis, J. R., Sauer-Zavala, S., Bentley, K. H., Thompson-Hollands, J., Carl, J. R., & Barlow, D. H. (2015). The unified protocol for transdiagnostic treatment of emotional disorders: preliminary exploration of effectiveness for group delivery. *Behavior Modification*, *39*, 295-321.

Butler, E. A., Lee, T. L., & Gross, J. J. (2007). Emotion regulation and culture: Are the social consequences of emotion suppression culture-specific? *Emotion*, *7*, 30-48.

Bydlowski, S., Corcos, M., Jeammet, P., Paterniti, S., Berthoz, S., Laurier, C., et al. (2005). Emotional-processing deficits in eating disorders. *International Journal of Eating Disorders*, *37*, 321−329.

Byrne, B. M. (2013). *Structural equation modeling with LISREL, PRELIS, and SIMPLIS: Basic concepts, applications, and programming*. New York, NY: Psychology Press.

Byrne, B. M. (2016). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. New York, NY: Routledge.

Cabello, R., Salguero, J. M., Fernández-Berrocal, P., & Gross, J. J. (2013). A Spanish adaptation of the emotion regulation questionnaire. *European Journal of Psychological Assessment*, *29*, 234-240.

Campbell-Sills, L., & Barlow, D. H. (2007). Incorporating emotion regulation into conceptualizations and treatments of anxiety and mood disorders. In J. J. Gross (Ed.). *Handbook of emotion regulation* (pp. 542–559). New York: Guilford Press.

Campbell-Sills, L., Ellard, K. K., & Barlow, D. H. (2014). Emotion regulation in anxiety disorders. In J. J. Gross (Ed.), *Handbook of emotion regulation* (pp. 393-412). New York, NY: Guilford Press.

Campos, A., Chiva, M., & Moreau, M. (2000). Alexithymia and mental imagery. *Personality and Individual Differences*, *29*, 787–791.

Capaldi, D. M., & Rothbart, M. K. (1992). Development and validation of an early adolescent temperament measure. *The Journal of Early Adolescence*, *12*, 153-173.

Caretti, V., Porcelli, P., Solano, L., Schimmenti, A., Bagby, R. M., & Taylor, G. J. (2011). Reliability and validity of the Toronto structured interview for alexithymia in a mixed clinical and nonclinical sample from Italy. *Psychiatry Research*, *187*, 432–436.

Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*, *56*, 267-283.

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.

Cattell, R. B. (1943). The description of personality: Basic traits resolved into clusters. *The Journal of Abnormal and Social Psychology*, *38*, 476-506.

Cattell, R. B. (1963). Theory of fluid and crystallized intelligence: A critical experiment. *Journal of Educational Psychology*, *54*, 1-22.

Chen, F. F., Sousa, K. H., & West, S. G. (2005). Testing measurement invariance of second-order factor models. *Structural Equation Modeling*, *12*, 471–492. doi:10.1207/s15328007sem1203_7

Cheung, G. W., & Rensvold, R. B. (1999). Testing factorial invariance across groups: A reconceptualization and proposed new method. *Journal of Management*, *25*, 1–27.

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling*, *9*, 233–255.

Claes, L., Smits, D., & Bijttebier, P. (2014). The Dutch version of the Emotion Reactivity Scale: Validation and relation with various behaviors in a sample of high school students. *European Journal of Psychological Assessment, 30*, 73-79.

Cleland, C., Magura, S., Foote, J., Rosenblum, A., & Kosanke, N. (2005). Psychometric properties of the Toronto alexithymia scale (TAS-20) for substance users. *Journal of Psychosomatic Research*, *58*, 299–306.

Cole, P. M., Michel, M. K., & Teti, L. O. D. (1994). The development of emotion regulation and dysregulation: A clinical perspective. *Monographs of the society for research in child development*, *59*, 73-102.

Comrey, A. L. (1988). Factor-analytic methods of scale development in personality and clinical psychology. *Journal of Consulting and Clinical Psychology*, *56*, 754-761.

Conklin, L. R., Cassiello-Robbins, C., Brake, C. A., Sauer-Zavala, S., Farchione, T. J., Ciraulo, D. A., & Barlow, D. H. (2015). Relationships among adaptive and maladaptive emotion regulation strategies and psychopathology during the treatment of comorbid anxiety and alcohol use disorders. *Behaviour Research and Therapy*, *73*, 124-130.

Connelly, M., & Denney, D. R. (2007). Regulation of emotions during experimental stress in alexithymia. *Journal of Psychosomatic Research*, *62*, 649–656.

Consedine, N. S., & Mauss, I. (2014). Tasks, capacities, and tactics: A skill-based conceptualization of emotion regulation across the lifespan. In P. Verhaeghen & C. Hertzog (Eds.), *The Oxford handbook of emotion, social cognition, and problem solving in adulthood* (pp. 142-154). New York, NY, US: Oxford University Press.

Cooper, M. L., Frone, M. R., Russell, M., & Mudar, P. (1995). Drinking to regulate positive and negative emotions: A motivational model of alcohol use. *Journal of Personality and Social Psychology*, *69*, 990-1005.

Coriale, G., Bilotta, E., Leone, L., Cosimi, F., Porrari, R., De Rosa, F., & Ceccanti, M. (2012). Avoidance coping strategies, alexithymia and alcohol abuse: A mediation analysis. *Addictive Behaviors*, *37*, 1224–1229.

Costa, P. T., & McCrae, R. R. (1992). Normal personality assessment in clinical practice: The NEO Personality Inventory. *Psychological Assessment*, *4*, 5-13.

Costa, P. T., & McCrae, R. R. (1995). Domains and facets: Hierarchical personality assessment using the Revised NEO Personality Inventory. *Journal of Personality Assessment*, *64*, 21-50.

Costa, P. T., & McCrae, R. R. (2010). *The NEO personality inventory-3*. Odessa, FL: Psychological Assessment Resources.

Curran, P. J., West, S. G., & Finch, J. F. (1996). The robustness of test statistics to nonnormality and specification error in confirmatory factor analysis. *Psychological Methods*, *1*, 16-29.

Czernecka, K., & Szymura, B. (2008). Alexithymia–imagination–creativity. *Personality and Individual Differences*, *45*, 445–450.

D'Argembeau, A., & Van der Linden, M. (2006). Individual differences in the phenomenology of mental time travel: The effect of vivid visual imagery and emotion regulation strategies. *Consciousness and Cognition*, *15*, 342–350.

D'Avanzato, C., Joormann, J., Siemer, M., & Gotlib, I. H. (2013). Emotion regulation in depression and anxiety: examining diagnostic specificity and stability of strategy use. *Cognitive Therapy and Research*, *37*, 968-980.

Davidson, R. J. (1998). Affective style and affective disorders: Perspectives from affective neuroscience. *Cognition and Emotion*, *12*, 307–330.

Davidson, R. J. (2015). Comment: Affective chronometry has come of age. *Emotion Review*, *7*, 368-370.

Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology*, *44*, 113–126.

De France, K., & Hollenstein, T. (2017). Assessing emotion regulation repertoires: The regulation of emotion systems survey. *Personality and Individual Differences*, *119*, 204–215.

de Timary, P., Luts, A., Hers, D., & Luminet, O. (2008). Absolute and relative stability of alexithymia in alcoholic inpatients undergoing alcohol withdrawal: Relationship to depression and anxiety. *Psychiatry Research*, *157*, 105–113.

Diaz, A., & Eisenberg, N. (2015). The process of emotion regulation is different from individual differences in emotion regulation: Conceptual arguments and a focus on individual differences. *Psychological Inquiry*, *26*, 37–47.

Duddu, V., Isaac, M. K., & Chaturvedi, S. K. (2003). Alexithymia in somatoform and depressive disorders. *Journal of Psychosomatic Research*, *54*, 435–438.

du Pont, A., Welker, K. Gilbert, K. E., & Gruber, J. (2016). The emerging field of positive emotion dysregulation. In K. D. Vohs & R. F. Baumeister (Eds.), *Handbook of self-regulation: Research, theory and applications* (pp. 364-379). New York, NY: Guilford Press.

Eastabrook, J. M., Lanteigne, D. M., & Hollenstein, T. (2013). Decoupling between physiological, self-reported, and expressed emotional responses in alexithymia. *Personality and Individual Differences*, *55*, 978–982.

Edwards, E. R., & Wupperman, P. (2017). Emotion regulation mediates effects of alexithymia and emotion differentiation on impulsive aggressive behavior. *Deviant Behavior*, *38*, 1160–1171.

Edwards, E., Shivaji, S., & Wupperman, P. (2018). The emotion mapping activity: Preliminary evaluation of a mindfulness-informed exercise to improve emotion labeling in alexithymic persons. *Scandinavian Journal of Psychology*, 1–9. http://dx.doi.org/10.1111/sjop.12438.

Edwards, E. R., & Wupperman, P. (2017). Emotion regulation mediates effects of alexithymia and emotion differentiation on impulsive aggressive behavior. *Deviant Behavior*, *38*, 1160-1171.

Ehring, T., & Quack, D. (2010). Emotion regulation difficulties in trauma survivors: The role of trauma type and PTSD symptom severity. *Behavior Therapy*, *41*, 587-598.

Eisenberg, N., Fabes, R. A., Guthrie, I. K., & Reiser, M. (2000). Dispositional emotionality and regulation: their role in predicting quality of social functioning. *Journal of Personality and Social Psychology*, *78*, 136-157.

Eisenberg, N., Hofer, C., Sulik, M. J., & Spinrad, T. L. (2014). Self-regulation, effortful control, and their socioemotional correlates. In J. J. Gross (Ed.). *Handbook of emotion regulation* (pp. 157–172). New York: Guilford Press.

Ekman, P., & Friesen, W. V. (1971). Constants across cultures in the face and emotion. *Journal of Personality and Social Psychology*, *17*, 124-129.

Ellard, K. K., Fairholme, C. P., Boisseau, C. L., Farchione, T. J., & Barlow, D. H. (2010). Unified protocol for the transdiagnostic treatment of emotional disorders: Protocol development and initial outcome data. *Cognitive and Behavioral Practice*, *17*, 88–101.

English, T., & John, O. P. (2013). Understanding the social effects of emotion regulation: The mediating role of authenticity for individual differences in suppression. *Emotion*, *13*, 314-329.

Erni, T., Lötscher, K., & Modestin, J. (1997). Two-factor solution of the 20-ltem Toronto alexithymia scale confirmed. *Psychopathology*, *30*, 335–340.

Etkin, A., Büchel, C., & Gross, J. J. (2015). The neural bases of emotion regulation. *Nature Reviews Neuroscience, 16*, 693-700.

Evers, C., Hopp, H., Gross, J. J., Fischer, A. H., Manstead, A. S., & Mauss, I. B. (2014). Emotion response coherence: A dual-process perspective. *Biological Psychology*, *98*, 43–49.

Eysenck, H. J. (1991). Dimensions of personality: 16, 5 or 3?—Criteria for a taxonomic paradigm. *Personality and Individual Differences*, *12*, 773-790.

Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods*, *4*, 272–299.

Fairholme, C. P., Boisseau, C. L., Ellard, K. K., Ehrenreich, J. T., & Barlow, D. H. (2010). Emotions, emotion regulation, and psychological treatment: A unified perspective. In A. M. King, & D. M. Sloan (Eds.). *Emotion regulation and psychopathology: A transdiagnostic approach to etiology and treatment* (pp. 283–309). New York, NY: Guilford.

Farchione, T. J., Fairholme, C. P., Ellard, K. K., Boisseau, C. L., Thompson-Hollands, J., Carl, J. R., ... & Barlow, D. H. (2012). Unified protocol for transdiagnostic treatment of emotional disorders: A randomized controlled trial. *Behavior Therapy*, *43*, 666-678.

Fernandes, B. S., Williams, L. M., Steiner, J., Leboyer, M., Carvalho, A. F., & Berk, M. (2017). The new field of 'precision psychiatry'. *BMC medicine*, *15*, 80.

Folkman, S., & Lazarus, R. S. (1980). An analysis of coping in a middle-aged community sample. *Journal of Health and Social Behavior*, 219–239.

Foran, H. M., & O'Leary, K. D. (2013). The role of relationships in understanding the alexithymia–depression link. *European Journal of Personality*, *27*, 470-480.

Fox, H. C., Axelrod, S. R., Paliwal, P., Sleeper, J., & Sinha, R. (2007). Difficulties in emotion regulation and impulse control during cocaine abstinence. *Drug and Alcohol Dependence*, *89*, 298−301.

Fox, H. C., Hong, K. A., & Sinha, R. (2008). Difficulties in emotion regulation and impulse control in recently abstinent alcoholics compared with social drinkers. *Addictive Behaviors*, *33*, 388-394.

Fraley, R. C., Heffernan, M. E., Vicary, A. M., & Brumbaugh, C. C. (2011). The Experiences in Close Relationships—Relationship Structures Questionnaire: A method for assessing attachment orientations across relationships. *Psychological Assessment*, *23*, 615-625.

Friedlander, L., Lumley, M. A., Farchione, T., & Doyal, G. (1997). Testing the alexithymia hypothesis: Physiological and subjective responses during relaxation and stress. *The Journal of Nervous and Mental Disease*, *185*, 233–239.

Fukunishi, I., Yoshida, H., & Wogan, J. (1998). Development of the alexithymia scale for children: A preliminary study. *Psychological Reports*, *82*, 43–49.

Garnefski, N., & Kraaij, V. (2007). The cognitive emotion regulation questionnaire. *European Journal of Psychological Assessment*, *23*, 141–149.

Gerbing, D. W., & Anderson, J. C. (1984). On the meaning of within-factor correlated measurement errors. *Journal of Consumer Research*, *11*, 572-580.

Gerbing, D. W., & Anderson, J. C. (1988). An updated paradigm for scale development incorporating unidimensionality and its assessment. *Journal of Marketing Research*, *25*, 186–192.

Gignac, G. E., Palmer, B. R., & Stough, C. (2007). A confirmatory factor analytic investigation of the TAS–20: Corroboration of a five-factor model and suggestions for improvement. *Journal of Personality Assessment*, *89*, 247–257.

Gilbert, K. E., Nolen-Hoeksema, S., & Gruber, J. (2013). Positive emotion dysregulation across mood disorders: How amplifying versus dampening predicts emotional reactivity and illness course. *Behaviour Research and Therapy*, *51*, 736-741.

Giuliani, N. R., & Berkman, E. T. (2015). Craving is an affective state and its regulation can be understood in terms of the extended process model of emotion regulation. *Psychological Inquiry*, *26*, 48–53.

Glenn, C. R., & Klonsky, E. D. (2009). Emotion dysregulation as a core feature of borderline personality disorder. *Journal of Personality Disorders*, *23*, 20–28.

Gold, M. S., & Bentler, P. M. (2000). Treatments of missing data: A Monte Carlo comparison of RBHDI, iterative stochastic regression imputation, and expectation maximization. *Structural Equation Modeling*, *7*, 319–355.

Goldberg, D. P., Krueger, R. F., Andrews, G., & Hobbs, M. J. (2009). Emotional disorders: Cluster 4 of the proposed meta-structure for DSM-V and ICD-11: Paper 5 of 7 of the thematic section: 'A proposal for a meta-structure for DSM-V and ICD-11'. *Psychological Medicine*, *39*, 2043-2059.

Goldin, P. R., & Gross, J. J. (2010). Effects of mindfulness-based stress reduction (MBSR) on emotion regulation in social anxiety disorder. *Emotion*, *10*, 83-91.

Goleman, D., Boyatzis, R., & McKee, A. (2013). *Primal leadership: Realizing the power of emotional intelligence*. Boston, MA, US: Harvard Business School Press.

Golena, N. (2014). *The relation between alexithymia and the vividness of memories during the recall of sad memories* (Bachelor's thesis). Enschede, Netherlands: University of Twente.

Gori, A., Giannini, M., Palmieri, G., Salvini, R., & Schuldberg, D. (2012). Assessment of alexithymia: Pychometric properties of the psychological treatment inventory-alexithymia scale (PTI-AS). *Psychology*, *3*, 231-236.

Gorsuch, R. L. (1983). *Factor analysis*. Hillsdale, NJ: Erlbaum.

Grabe, H. J., Löbel, S., Dittrich, D., Bagby, R. M., Taylor, G. J., Quilty, L. C., & Freyberger, H. J. (2009). The German version of the Toronto Structured Interview for Alexithymia: Factor structure, reliability, and concurrent validity in a psychiatric patient sample. *Comprehensive Psychiatry*, *50*, 424–430.

Grandey, A. A. (2000). Emotional regulation in the workplace: A new way to conceptualize emotional labor. *Journal of Occupational Health Psychology*, *5*, 95-110.

Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment*, *26*, 41–54.

Greenberg, L. S., & Paivio, S. C. (2003). *Working with emotions in psychotherapy*. Guilford Press.

Gross, J. J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology, 2*, 271–299.

Gross, J. J. (2014). Emotion regulation: Conceptual and empirical foundations. In J. J. Gross (Ed.), *Handbook of emotion regulation* (pp. 3–20). New York, NY: Guilford Press.

Gross, J. J. (2015a). Emotion regulation: Current status and future prospects. *Psychological Inquiry*, *26*, 1–26.

Gross, J. J. (2015b). The extended process model of emotion regulation: Elaborations, applications, and future directions. *Psychological Inquiry*, *26*, 130–137.

Gross, J. J., & Barrett, L. F. (2011). Emotion generation and emotion regulation: One or two depends on your point of view. *Emotion Review*, *3*, 8–16.

Gross, J. J., & Jazaieri, H. (2014). Emotion, emotion regulation, and psychopathology: An affective science perspective. *Clinical Psychological Science*, *2*, 387–401.

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, *85*, 348–362.

Grossmann, I., Karasawa, M., Kan, C., & Kitayama, S. (2014). A cultural perspective on emotional experiences across the life span. *Emotion, 14*, 679-692.

Groth-Marnat, G. (2009). *Handbook of psychological assessment*. New York, NY: Wiley.

Gruber, J. (2011). Can feeling too good be bad? Positive emotion persistence (PEP) in bipolar disorder. *Current Directions in Psychological Science*, *20*, 217-221.

Gruber, J., Eidelman, P., Johnson, S. L., Smith, B., & Harvey, A. G. (2011). Hooked on a feeling: Rumination about positive and negative emotion in inter-episode bipolar disorder. *Journal of Abnormal Psychology*, *120*, 956-961.

Gruber, J., Harvey, A. G., & Gross, J. J. (2012). When trying is not enough: Emotion regulation and the effort–success gap in bipolar disorder. *Emotion*, *12*, 997-1003.

Gruber, J., Harvey, A. G., & Purcell, A. (2011). What goes up can come down? A preliminary investigation of emotion reactivity and emotion recovery in bipolar disorder. *Journal of Affective Disorders*, *133*, 457–466.

Gruber, J., Johnson, S. L., Oveis, C., & Keltner, D. (2008). Risk for mania and positive emotional responding: Too much of a good thing? *Emotion*, *8*, 23-33.

Grynberg, D., Luminet, O., Corneille, O., Grèzes, J., & Berthoz, S. (2010). Alexithymia in the interpersonal domain: A general deficit of empathy? *Personality and Individual Differences*, *49*, 845–850.

Gullone, E., & Taffe, J. (2012). The Emotion Regulation Questionnaire for Children and Adolescents (ERQ–CA): A psychometric evaluation. *Psychological Assessment*, *24*, 409-417.

Han, K., Burns, G. N., Weed, N. C., Hatchett, G. T., & Kurokawa, N. K. (2009). Evaluation of an observer form of the Coping Inventory for Stressful Situations. *Educational and Psychological Measurement*, *69*, 675–695.

Harre, R. (1986). The social constructionist viewpoint. In R. Harre (Ed.), *The social construction of emotions* (pp. 2–14). Oxford, UK: Blackwell.

Harris, R. (2009). *ACT made simple: An easy-to-read primer on acceptance and commitment therapy*. New Harbinger Publications.

Haviland, M. G., Hendryx, M. S., Cummings, M. A., Shaw, D. G., & MacMurray, J. P. (1991). Multidimensionality and state dependency of alexithymia in recently sober alcoholics. *The Journal of Nervous and Mental Disease*, *179*, 284–290.

Haviland, M. G., & Reise, S. P. (1996). A California Q-set alexithymia prototype and its relationship to ego-control and ego-resiliency. *Journal of Psychosomatic Research*, *41*, 597-607.

Haviland, M. G., & Reise, S. P. (1996). Structure of the twenty-item Toronto alexithymia scale. *Journal of Personality Assessment*, *66*, 116–125.

Haviland, M. G., Shaw, D. G., MacMurray, J. P., & Cummings, M. A. (1988). Validation of the Toronto Alexithymia Scale with substance abusers. *Psychotherapy and Psychosomatics*, *50*, 81-87.

Haviland, M. G., Warren, W. L., & Riggs, M. L. (2000). An observer scale to measure alexithymia. *Psychosomatics*, *41*, 385–392.

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy*. New York: Guilford Press.

Henry, C., Van den Bulke, D., Bellivier, F., Roy, I., Swendsen, J., M'Bailara, K., … Leboyer, M. (2008). Affective lability and affect intensity as core dimensions of bipolar disorders during euthymic period. *Psychiatry Research*, *159*, 1–6.

Honkalampi, K., Hintikka, J., Laukkanen, E., & Viinamäki, J. L. H. (2001). Alexithymia and depression: A prospective study of patients with major depressive disorder. *Psychosomatics*, *42*, 229–234.

Harrison, A., Sullivan, S., Tchanturia, K., & Treasure, J. (2010). Emotional functioning in eating disorders: attentional bias, emotion recognition and emotion regulation. *Psychological Medicine*, *40*, 1887-1897.

Hogan, R., & Nicholson, R. A. (1988). The meaning of personality test scores. *American Psychologist*, *43*, 621-626.

Hu, L. T., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods*, *3*, 424–453.

Inslegers, R., Meganck, R., Ooms, E., Vanheule, S., Taylor, G., Bagby, R. M., ... Desmet, M. (2013). The Dutch language version of the Toronto structured interview for alexithymia: Reliability, factor structure and concurrent validity. *Acta Psychiatrica Belgica*, *53*, 93–116.

Izadpanah, S., Barnow, S., Neubauer, A. B., & Holl, J. (2017). Development and validation of the Heidelberg Form for Emotion Regulation Strategies (HFERST): Factor structure, reliability, and validity. *Assessment*, 1-27. doi: 1073191117720283

John, O. P., & Eng, J. (2014). Three approaches to individual differences in affect regulation: Conceptualizations, measures, and findings. In J. J. Gross (Ed.). *Handbook of emotion regulation* (pp. 321–345). (2nd ed.). New York, NY: Guilford.

John, O. P., & Gross, J. J. (2004). Healthy and unhealthy emotion regulation: Personality processes, individual differences, and life span development. *Journal of Personality*, *72*, 1301-1334.

Joormann, J., & Gotlib, I. H. (2010). Emotion regulation in depression: Relation to cognitive inhibition. *Cognition and Emotion*, *24*, 281-298.

Jørgensen, M. M., Zachariae, R., Skytthe, A., & Kyvik, K. (2007). Genetic and environmental factors in alexithymia: A population-based study of 8,785 Danish twin pairs. *Psychotherapy and Psychosomatics*, *76*, 369-375.

Kennedy, M., & Franklin, J. (2002). Skills-based treatment for alexithymia: An exploratory case series. *Behaviour Change*, *19*, 158–171.

Kessler, R. C., Chiu, W. T., Demler, O., & Walters, E. E. (2005). Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, *62*, 617-627.

Khantzian, E. J. (1997). The self-medication hypothesis of substance use disorders: A reconsideration and recent applications. *Harvard Review of Psychiatry*, *4*, 231-244.

Kia-Keating, M., No, U., Moore, S., Furlong, M. J., Liu, S., & You, S. (2017). Structural validity of the Depression, Anxiety, and Stress Scales-21 adapted for US undergraduates. *Emerging Adulthood*, 1–7.

Kim, S. H., & Hamann, S. (2007). Neural correlates of positive and negative emotion regulation. *Journal of Cognitive Neuroscience*, *19*, 776-798.

Kline, P. (1979). *Psychometrics and psychology*. London: Academic Press.

Kline, P. (2013). *Handbook of psychological testing*. Routledge.

Kline, R. B. (2005). *Principles and practice of structural equation modeling*. New York: The Guilford Press.

Koch, A. S., Kleiman, A., Wegener, I., Zur, B., Imbierowicz, K., Geiser, F., & Conrad, R. (2015). Factorial structure of the 20-item Toronto alexithymia scale in a large sample of somatoform patients. *Psychiatry Research*, *225*, 355–363.

Kooiman, C. G., Spinhoven, P., & Trijsburg, R.W. (2002). The assessment of alexithymia: A critical review of the literature and a psychometric study of the Toronto Alexithymia Scale-20. *Journal of Psychosomatic Research*, *53*, 1083–1090.

Kring, A. M., & Bachorowski, J. A. (1999). Emotions and psychopathology. *Cognition and Emotion*, *13*, 575-599.

Kuppens, P., & Verduyn, P. (2015). Looking at emotion regulation through the window of emotion dynamics. *Psychological Inquiry*, *26*, 72–79.

Lane, R. D., & Schwartz, G. E. (1987). Levels of emotional awareness: A cognitive-developmental theory and its application to psychopathology. *The American Journal of Psychiatry*, *144*, 133–143.

Lane, R. D., Lee, S., Reidel, R., Weldon, V., Kaszniak, A., & Schwartz, G. E. (1996). Impaired verbal and nonverbal emotion recognition in alexithymia. *Psychosomatic Medicine*, *58*, 203–210.

Lane, R. D., Quinlan, D. M., Schwartz, G. E., Walker, P. A., & Zeitlin, S. B. (1990). The levels of emotional awareness scale: A cognitive-developmental measure of emotion. *Journal of Personality Assessment*, *55*, 124–134.

Lane, R. D., Weihs, K. L., Herring, A., Hishaw, A., & Smith, R. (2015). Affective agnosia: Expansion of the alexithymia construct and a new opportunity to integrate and extend Freud's legacy. *Neuroscience & Biobehavioral Reviews*, *55*, 594–611.

Lannoy, S., Heeren, A., Rochat, L., Rossignol, M., Van der Linden, M., & Billieux, J. (2014). Is there an all-embracing construct of emotion reactivity? Adaptation and validation of the emotion reactivity scale among a French-speaking community sample. *Comprehensive Psychiatry*, *55*, 1960-1967.

Larsen, R. J. (2000). Toward a science of mood regulation. *Psychological Inquiry*, *11*, 129–141.

Lazarus, R. S. (1991). *Emotion and adaptation*. New York, NY: Oxford University Press.

Lee, D. J., Witte, T. K., Bardeen, J. R., Davis, M. T., & Weathers, F. W. (2016). A factor analytic evaluation of the difficulties in emotion regulation scale. *Journal of Clinical Psychology*, *72*, 933–946.

Leising, D., Grande, T., & Faber, R. (2009). The Toronto Alexithymia Scale (TAS-20): A measure of general psychological distress. *Journal of Research in Personality*, *43*, 707–710.

Levy-Gigi, E., Bonanno, G. A., Shapiro, A. R., Richter-Levin, G., Kéri, S., & Sheppes, G. (2016). Emotion regulatory flexibility sheds light on the elusive relationship between repeated traumatic exposure and posttraumatic stress disorder symptoms. *Clinical Psychological Science: A Journal of the Association for Psychological Science*, *4*, 28–39.

Leweke, F., Bausch, S., Leichsenring, F., Walter, B., & Stingl, M. (2009). Alexithymia as a predictor of outcome of psychodynamically oriented inpatient treatment. *Psychotherapy Research*, *19*, 323–331.

Leweke, F., Leichsenring, F., Kruse, J., & Hermes, S. (2012). Is alexithymia associated with specific mental disorders. *Psychopathology*, *45*, 22–28.

Lezak, M. D., Howieson, D. B., & Loring, D. W. (2004). *Neuropsychological assessment*. USA: Oxford University Press.

Li, S., Zhang, B., Guo, Y., & Zhang, J. (2015). The association between alexithymia as assessed by the 20-item Toronto Alexithymia Scale and depression: A meta-analysis. *Psychiatry Research*, *227*, 1–9.

Linehan, M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. New York, NY: Guilford Press.

Little, T. D., Lindenberger, U., & Nesselroade, J. R. (1999). On selecting indicators for multivariate measurement and modeling with latent variables: When “good” indicators are bad and “bad” indicators are good. *Psychological Methods*, *4*, 192–211.

Larsen, R. J., & Diener, E. (1987). Affect intensity as an individual difference characteristic: A review. *Journal of Research in Personality*, *21*, 1-39.

Loas, G., Corcos, M., Stephan, P., Pellet, J., Bizouard, P., Venisse, J. L., et al. (2001). Factorial structure of the 20-item Toronto alexithymia scale: Confirmatory factorial analyses in nonclinical and clinical samples. *Journal of Psychosomatic Research*, *50*, 255–261.

Loas, G., Otmani, O., Verrier, A., Fremaux, D., & Marchand, M. P. (1996). Factor analysis of the French version of the 20-ltem Toronto alexithymia scale (TAS-20). *Psychopathology*, *29*, 139–144.

Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy*, *33*, 335–343.

Luminet, O., Bagby, R. M., & Taylor, G. J. (2001). An evaluation of the absolute and relative stability of alexithymia in patients with major depression. *Psychotherapy and Psychosomatics*, *70*, 254–260.

Luminet, O., Rimé, B., Bagby, R. M., & Taylor, G. (2004). A multimodal investigation of emotional responding in alexithymia. *Cognition and Emotion*, *18*, 741–766.

Luminet, O., Rokbani, L., Ogez, D., & Jadoulle, V. (2007). An evaluation of the absolute and relative stability of alexithymia in women with breast cancer. *Journal of Psychosomatic Research*, *62*, 641–648.

Luminet, O., Vermeulen, N., Demaret, C., Taylor, G. J., & Bagby, R. M. (2006). Alexithymia and levels of processing: Evidence for an overall deficit in remembering emotion words. *Journal of Research in Personality*, *40*, 713–733.

Lundh, L. G., & Simonsson-Sarnecki, M. (2001). Alexithymia, emotion, and somatic complaints. *Journal of Personality*, *69*, 483–510.

Lundh, L. G., Johnsson, A., Sundqvist, K., & Olsson, H. (2002). Alexithymia, memory of emotion, emotional awareness, and perfectionism. *Emotion*, *2*, 361–379.

Lyvers, M., McCann, K., Coundouris, S., Edwards, M. S., & Thorberg, F. A. (2018). Alexithymia in relation to alcohol use, emotion recognition, and empathy: The role of externally oriented thinking. *American Journal of Psychology*, *131*, 41–51.

Mantani, T., Okamoto, Y., Shirao, N., Okada, G., & Yamawaki, S. (2005). Reduced activation of posterior cingulate cortex during imagery in subjects with high degrees of alexithymia: A functional magnetic resonance imaging study. *Biological Psychiatry*, *57*, 982–990.

Marchesi, C., Ossola, P., Tonna, M., & De Panfilis, C. (2014). The TAS-20 more likely measures negative affects rather than alexithymia itself in patients with major depression, panic disorder, eating disorders and substance use disorders. *Comprehensive Psychiatry*, *55*, 972–978.

Markus, H. (1977). Self-schemata and processing information about the self. *Journal of Personality and Social Psychology*, *35*, 63–78.

Marsh, H. W., & Hocevar, D. (1985). Application of confirmatory factor analysis to the study of self-concept: First-and higher order factor models and their invariance across groups. *Psychological Bulletin*, *97*, 562–582.

Marsh, H. W., Hau, K. T., & Wen, Z. (2004). In search of golden rules: Comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling*, *11*, 320-341.

Marty, P., & de M'Uzan, M. (1963). La "pensee operatoire". *Revue Française de Psychanalyse*, *27*, 1345–1356.

Matsumoto, D., Yoo, S. H., & Nakagawa, S. (2008). Culture, emotion regulation, and adjustment. *Journal of Personality and Social Psychology*, *94*, 925–937.

Matsunaga, M. (2010). How to factor-analyze your data right: Do's, don'ts, and how-to's. *International Journal of Psychological Research*, *3*, 97–110.

Mattila, A. K., Keefer, K. V., Taylor, G. J., Joukamaa, M., Jula, A., Parker, J. D., & Bagby, R. M. (2010). Taxometric analysis of alexithymia in a general population sample from Finland. *Personality and Individual Differences*, *49*, 216–221.

Mauss, I. B., Cook, C. L., Cheng, J. Y., & Gross, J. J. (2007). Individual differences in cognitive reappraisal: Experiential and physiological responses to an anger provocation. *International Journal of Psychophysiology*, *66*, 116–124.

Mauss, I. B., Levenson, R. W., McCarter, L., Wilhelm, F. H., & Gross, J. J. (2005). The tie that binds? Coherence among emotion experience, behavior, and physiology. *Emotion*, *5*, 175–190.

Mayer, J. D., Salovey, P., & Caruso, D. (2002). *Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT): User's manual*. Toronto, ON: Multi-Health Systems.

McDougall, J. (1974). The psychosomata and the psychoanalytic process. *Internal Review of Psychoanalysis*, *1*, 437–459.

McGillivray, L., Becerra, R., & Harms, C. (2017). Prevalence and demographic correlates of alexithymia: A comparison between Australian psychiatric and community samples. *Journal of Clinical Psychology*, *73*, 76–87.

McGrew, K. S. (2009). CHC theory and the human cognitive abilities project: Standing on the shoulders of the giants of psychometric intelligence research. *Intelligence*, *37*, 1-10.

McHugh, R. K., Reynolds, E. K., Leyro, T. M., & Otto, M. W. (2013). An examination of the association of distress intolerance and emotion regulation with avoidance. *Cognitive Therapy and Research*, *37*, 363–367.

Meganck, R., Vanheule, S., & Desmet, M. (2008). Factorial validity and measurement invariance of the 20-itemToronto Alexithymia Scale in clinical and nonclinical samples. *Assessment*, *15*, 36–47.

Melka, S. E., Lancaster, S. L., Bryant, A. R., & Rodriguez, B. F. (2011). Confirmatory factor and measurement invariance analyses of the Emotion Regulation Questionnaire. *Journal of Clinical Psychology*, *67*, 1283–1293.

Mennin, D. S., & Farach, F. J. (2007). Emotion and evolving treatments for adult psychopathology. *Clinical Psychology: Science and Practice*, *14*, 329−352.

Mennin, D. S., & Fresco, D. M. (2014). Emotion regulation therapy. In J. J. Gross (Ed.), *Handbook of emotion regulation* (pp. 469-490). New York, NY, US: Guilford Press.

Montag, C., & Panksepp, J. (2017). Primary emotional systems and personality: an evolutionary perspective. *Frontiers in Psychology*, *8*, 464.

Moore, S. A., Zoellner, L. A., & Mollenholt, N. (2008). Are expressive suppression and cognitive reappraisal associated with stress-related symptoms?. *Behaviour Research and Therapy*, *46*, 993–1000.

Morera, O. F., Culhane, S. E.,Watson, P. J., & Skewes, M. C. (2005). Assessing the reliability and validity of the Bermond-Vorst Alexithymia Questionnaire among US Anglo and US Hispanic samples. *Journal of Psychosomatic Research*, *58*, 289–298.

Müller, J., Bühner, M., & Ellgring, H. (2003). Is there a reliable factorial structure in the 20-item Toronto alexithymia scale?: A comparison of factor models in clinical and normal adult samples. *Journal of Psychosomatic Research*, *55*, 561–568.

Müller, J., Bühner, M., & Ellgring, H. (2004). The assessment of alexithymia: Psychometric properties and validity of the Bermond–Vorst alexithymia questionnaire. *Personality and Individual Differences*, *37*, 373–391.

Nelis, D., Quoidbach, J., Hansenne, M., & Mikolajczak, M. (2011). Measuring individual differences in emotion regulation: The emotion regulation profile-revised (ERP-R). *Psychologica Belgica*, *51*, 49-91.

Nemiah, J. C. (1977). Alexithymia: Theoretical considerations. *Psychotherapy and Psychosomatics*, *28*, 199–206.

Nemiah, J. C. (1984). The psychodynamic view of anxiety. In R. O. Pasnau (Ed.), *Diagnosis and treatment of anxiety disorders* (pp. 117–137).Washington, DC: American Psychiatric Press.

Nemiah, J. C., & Sifneos, P. E. (1970). Psychosomatic illness: A problem in communication. *Psychotherapy and Psychosomatics*, *18*, 154–160.

Neumann, D., Malec, J. F., & Hammond, F. M. (2017). Reductions in alexithymia and emotion dysregulation after training emotional self-awareness following traumatic brain injury: A phase I trial. *The Journal of Head Trauma Rehabilitation*, *32*, 286-295.

New, A. S., Rot, M. A. H., Ripoll, L. H., Perez-Rodriguez, M. M., Lazarus, S., Zipursky, E., ...Siever, L. J. (2012). Empathy and alexithymia in borderline personality disorder: Clinical and laboratory measures. *Journal of Personality Disorders*, *26*, 660–675.

Newton, T. L., & Contrada, R. J. (1994). Alexithymia and repression: Contrasting emotion focused coping styles. *Psychosomatic Medicine*, *56*, 457–462.

Nock, M. K., Wedig, M. M., Holmberg, E. B., & Hooley, J. M. (2008). The emotion reactivity scale: Development, evaluation, and relation to self injurious thoughts and behaviors. *Behavior Therapy*, *39*, 107–116.

Nolen-Hoeksema, S., & Watkins, E. R. (2011). A heuristic for developing transdiagnostic models of psychopathology: Explaining multifinality and divergent trajectories. *Perspectives on Psychological Science*, *6*, 589-609.

Norcross, J. C., & Karpiak, C. P. (2012). Clinical psychologists in the 2010s: 50 years of the APA division of clinical psychology. *Clinical Psychology: Science and Practice*, *19*, 1-12.

Nunnally, J. C. (1978). *Psychometric Methods*. New York: McGraw Hill.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory*. New York: McGraw-Hill.

Ochsner, K. N., & Gross, J. J. (2014). The neural bases of emotion and emotion regulation: A valuation perspective. In J. J. Gross (Ed.). *Handbook of emotion regulation* (pp. 23–42). New York, NY: Guilford Press.

Osborne, T. L., Michonski, J., Sayrs, J., Welch, S. S., & Anderson, L. K. (2017). Factor structure of the Difficulties in Emotion Regulation Scale (DERS) in adult outpatients receiving dialectical behavior therapy (DBT). *Journal of Psychopathology and Behavioral Assessment*, *39*, 355–371.

Panayiotou, G., Leonidou, C., Constantinou, E., Hart, J., Rinehart, K. L., Sy, J. T., & Björgvinsson, T. (2015). Do alexithymic individuals avoid their feelings? Experiential avoidance mediates the association between alexithymia, psychosomatic, and depressive symptoms in a community and a clinical sample. *Comprehensive Psychiatry*, *56*, 206–216.

Pandey, R., Mandal, M. K., Taylor, G. J., & Parker, J. D. (1996). Crosscultural alexithymia: Development and validation of a Hindi translation of the 20-item Toronto alexithymia scale. *Journal of Clinical Psychology*, *52*, 173–176.

Panksepp, J. (1998). *Affective neuroscience: The foundations of human and animal emotions*. New York, NY: Oxford University Press.

Panksepp, J. (2005). Affective consciousness: Core emotional feelings in animals and humans. *Consciousness and Cognition*, *14*, 30-80.

Parker, J. D., Eastabrook, J. M., Keefer, K. V., & Wood, L. M. (2010). Can alexithymia be assessed in adolescents? Psychometric properties of the 20-item Toronto alexithymia scale in younger, middle, and older adolescents. *Psychological Assessment*, *22*, 798–808.

Parker, J. D., Keefer, K. V., Taylor, G. J., & Bagby, R. M. (2008). Latent structure of the alexithymia construct: A taxometric investigation. *Psychological Assessment*, *20*, 385–396.

Parker, J. D., Taylor, G. J., & Bagby, R. M. (2003). The 20-item Toronto alexithymia scale: III. Reliability and factorial validity in a community population. *Journal of Psychosomatic Research*, *55*, 269–275.

Perez, C. R., & Soto, J. A. (2011). Cognitive reappraisal in the context of oppression: Implications for psychological functioning. *Emotion*, *11*, 675-680.

Piaget, J. (1981). *Intelligence and affectivity: Their relationship during child development*. Palo Alto, CA: Annual Reviews.

Taylor, G. J., & Bagby, R.M. (2004). New trends in alexithymia research. *Psychotherapy and Psychosomatics*, *73*, 68–77.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*, 879–903.

Pollatos, O., Werner, N. S., Duschek, S., Schandry, R., Matthias, E., Traut-Mattausch, E., & Herbert, B.M. (2011). Differential effects of alexithymia subscales on autonomic reactivity and anxiety during social stress. *Journal of Psychosomatic Research*, *70*, 525–533.

Porcelli, P., & Mihura, J. L. (2010). Assessment of alexithymia with the Rorschach comprehensive system: The Rorschach alexithymia scale (RAS). *Journal of Personality Assessment*, *92*, 128–136.

Preece, D., Becerra, R., & Campitelli, G. (2018). Assessing emotional reactivity: Psychometric properties of the Perth Emotional Reactivity Scale and the development of a short form. *Journal of Personality Assessment*, 1–9. https://doi.org/10.1080/00223891.2018.1465430.

Preece, D., Becerra, R., Allan, A., Robinson, K., & Dandy, J. (2017). Establishing the theoretical components of alexithymia via factor analysis: Introduction and validation of the attention-appraisal model of alexithymia. *Personality and Individual Differences*, *119*, 341–352.

Preece, D., Becerra, R., Robinson, K., & Dandy, J. (2018). Assessing alexithymia: Psychometric properties and factorial invariance of the 20-item Toronto Alexithymia Scale (TAS-20) in nonclinical and psychiatric samples. *Journal of Psychopathology and Behavioral Assessment*, *40*, 276-287.

Preece, D., Becerra, R., Robinson, K., Dandy, J., & Allan, A. (2018a). The psychometric assessment of alexithymia: Development and validation of the Perth Alexithymia Questionnaire. *Personality and Individual Differences*, *132*, 32–44.

Preece, D.A., Becerra, R., Robinson, K., Dandy, J., & Allan, A. (2018b). Measuring emotion regulation ability across negative and positive emotions: The Perth Emotion Regulation Competency Inventory (PERCI). *Personality and Individual Differences*, *135*, 229-241.

Preece, D. A., Becerra, R., Robinson, K., & Gross, J. J. (2019). The Emotion Regulation Questionnaire: Psychometric properties in general community samples. *Journal of Personality Assessment*, 1-9. http://doi.org/10.1080/00223891.2018.156319

Preston, C. C., & Colman, A. M. (2000). Optimal number of response categories in rating scales: Reliability, validity, discriminating power, and respondent preferences. *Acta Psychologica*, 104, 1–15.

Qualtrics. (2014). *ESOMAR 28*. Retrieved from https://success.qualtrics.com/rs/qualtrics/images/ESOMAR%2028%202014.pdf

Quoidbach, J., Berry, E. V., Hansenne, M., & Mikolajczak, M. (2010). Positive emotion regulation and well-being: Comparing the impact of eight savoring and dampening strategies. *Personality and Individual Differences*, *49*, 368-373.

Raubenheimer, J. (2004). An item selection procedure to maximise scale reliability and validity. *SA Journal of Industrial Psychology*, *30*, 59–64.

Reise, S. P. (2012). The rediscovery of bifactor measurement models. *Multivariate Behavioral Research*, *47*, 667–696.

Reise, S. P., Moore, T. M., & Haviland, M. G. (2010). Bifactor models and rotations: Exploring the extent to which multidimensional data yield univocal scale scores. *Journal of Personality Assessment*, *92*, 544–559.

Rieffe, C., Oosterveld, P., Miers, A. C., Terwogt, M. M., & Ly, V. (2008). Emotion awareness and internalising symptoms in children and adolescents: The emotion awareness questionnaire revised. *Personality and Individual Differences*, *45*, 756–761.

Ripper, C. A., Boyes, M. E., Clarke, P. J., & Hasking, P. A. (2018). Emotional reactivity, intensity, and perseveration: Independent dimensions of trait affect and associations with depression, anxiety, and stress symptoms. *Personality and Individual Differences*, *121*, 93–99.

Rodebaugh, T. L., Woods, C. M., & Heimberg, R. G. (2007). The reverse of social anxiety is not always the opposite: The reverse-scored items of the social interaction anxiety scale do not belong. *Behavior Therapy*, *38*, 192–206.

Rosenberg, N., Rufer, M., Lichev, V., Ihme, K., Grabe, H. J., Kugel, H., ... Suslow, T. (2016). Observer-rated alexithymia and its relationshipwith the five-factor-model of personality. *Acta Psychiatrica Belgica*, *56*, 118–134.

Rosenthal, M. Z., Gratz, K. L., Kosson, D. S., Cheavens, J. S., Lejuez, C. W., & Lynch, T. R. (2008). Borderline personality disorder and emotional responding: A review of the research literature. *Clinical Psychology Review*, *28*, 75-91.

Rottenberg, J. E., & Johnson, S. L. (2007). *Emotion and psychopathology: Bridging affective and clinical science*. New York, NY: Guilford Press.

Rottenberg, J., Gross, J. J., & Gotlib, I. H. (2005). Emotion context insensitivity in major depressive disorder. *Journal of Abnormal Psychology*, *114*, 627−639.

Sala, M. N., Molina, P., Abler, B., Kessler, H., Vanbrabant, L., & van de Schoot, R. (2012). Measurement invariance of the Emotion Regulation Questionnaire (ERQ). A cross-national validity study. *European Journal of Developmental Psychology*, *9*, 751-757.

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: American Psychological Association.

Samur, D., Tops, M., Schlinkert, C., Quirin, M., Cuijpers, P., & Koole, S. L. (2013). Four decades of research on alexithymia: Moving toward clinical applications. *Frontiers in Psychology*, *4*, 1–4.

Satorra, A., & Bentler, P. M. (1994). Corrections to test statistics and standard errors in covariance structure analysis. In A. von Eye & C. C. Clogg (Eds.), *Latent variables analysis: Applications for developmental research* (pp. 399–419). Thousand Oaks, CA: Sage Publications, Inc.

Satorra, A., & Bentler, P. M. (1994). Corrections to test statistics and standard errors in covariance structure analysis. In A. von Eye & C. C. Clogg (Eds.), *Latent variables*

analysis: Applications for developmental research (pp. 399-419). Thousand Oaks, CA, US: Sage Publications, Inc.

Sauer, S., & Baer, R. (2009). Relationships between thought suppression and symptoms of borderline personality disorder. *Journal of Personality Disorders*, *23*, 48-61.

Sauer, S. E., & Baer, R. A. (2010). Validation of measures of biosocial precursors to borderline personality disorder: Childhood emotional vulnerability and environmental invalidation. *Assessment*, *17*, 454–466.

Sauer-Zavala, S., & Barlow, D. H. (2014). The case for borderline personality disorder as an emotional disorder: Implications for treatment. *Clinical Psychology: Science and Practice*, *21*, 118-138.

Sauer-Zavala, S., Boswell, J. F., Gallagher, M. W., Bentley, K. H., Ametaj, A., & Barlow, D. H. (2012). The role of negative affectivity and negative reactivity to emotions in predicting outcomes in the unified protocol for the transdiagnostic treatment of emotional disorders. *Behaviour Research and Therapy*, *50*, 551-557.

Sauer-Zavala, S., Cassiello-Robbins, C., Ametaj, A. A., Wilner, J. G., & Pagan, D. (2018). Transdiagnostic treatment personalization: The feasibility of ordering unified protocol modules according to patient strengths and weaknesses. *Behavior Modification*, 1-26. doi: 10.1177/0145445518774914

Sauer-Zavala, S., Gutner, C. A., Farchione, T. J., Boettcher, H. T., Bullis, J. R., & Barlow, D. H. (2017). Current definitions of “transdiagnostic” in treatment development: A search for consensus. *Behavior Therapy*, *48*, 128-138.

Schmader, T., & Mendes, W. B. (2015). Putting feelings in a social context: Three case studies applying Gross's extended model of emotion regulation. *Psychological Inquiry*, *26*, 116–122.

Schumacker, R. E., & Lomax, R. G. (2004). *A beginner's guide to structural equation modeling*. Mahwah, NJ: Erlbaum and Associates.

Sekely, A., Taylor, G. J., & Bagby, R. M. (2018). Developing a short version of the Toronto structured interview for alexithymia using item response theory. *Psychiatry Research*, *266*, 218-227.

Shaver, P. R., & Mikulincer, M. (2014). Adult attachment and emotion regulation. In J. Gross (Ed.). *Handbook of emotion regulation*. New York, NY: Guilford Press.

Sifneos, P. E. (1973). The prevalence of 'alexithymic' characteristics in psychosomatic patients. *Psychotherapy and Psychosomatics*, *22*, 255–262.

Sifneos, P. E. (1996). Alexithymia: Past and present. *The American Journal of Psychiatry*, *153*, 137–142.

Silvers, J. A., McRae, K., Gabrieli, J. D., Gross, J. J., Remy, K. A., & Ochsner, K. N. (2012). Age-related differences in emotional reactivity, regulation, and rejection sensitivity in adolescence. *Emotion*, *12*, 1235-1247.

Smith, R., Killgore, W. D. S., & Lane, R. D. (2017). The structure of emotional experience and its relation to trait emotional awareness: A theoretical review. *Emotion*, *18*, 670-692.

Son, S., Jo, H., Rim, H. D., Kim, J. H., Kim, H.W., Bae, G. Y., & Lee, S. J. (2012). A comparative study on alexithymia in depressive, somatoform, anxiety, and psychotic disorders among Koreans. *Psychiatry Investigation*, *9*, 325–331.

Soto, J. A., Armenta, B. E., Perez, C. R., Zamboanga, B. L., Umaña-Taylor, A. J., Lee, R. M., ... & Le, T. N. (2012). Strength in numbers? Cognitive reappraisal tendencies and psychological functioning among Latinos in the context of oppression. *Cultural Diversity and Ethnic Minority Psychology*, *18*, 384-394.

Soto, J. A., Perez, C. R., Kim, Y. H., Lee, E. A., & Minnick, M. R. (2011). Is expressive suppression always associated with poorer psychological functioning? A cross-cultural comparison between European Americans and Hong Kong Chinese. *Emotion*, *11*, 1450-1455.

Spaapen, D. L., Waters, F., Brummer, L., Stopa, L., & Bucks, R. S. (2014). The Emotion Regulation Questionnaire: Validation of the ERQ-9 in two community samples. *Psychological Assessment*, *26*, 1-7.

Spearman, C. (1904). "General Intelligence," objectively determined and measured. *The American Journal of Psychology*, *15*, 201-292.

Spreen, O., & Strauss, E. (2006). *A compendium of neuropsychological tests: Administration, norms, and commentary*. New York, NY, US: Oxford University Press.

Stanford Psychophysiology Laboratory (2018). *Resources: The Emotion Regulation Questionnaire*. Retrieved from https://spl.stanford.edu/resources

Stawarczyk, D., Majerus, S., Van der Linden, M., & D'Argembeau, A. (2012). Using the daydreaming frequency scale to investigate the relationships between mind-wandering, psychological well-being, and present-moment awareness. *Frontiers in Psychology*, *3*, 1–15.

Stevens, J. P. (1992). *Applied multivariate statistics for the social sciences*. Hillsdale, NJ: Erlbaum.

Strickland, J., Parry, C. L., Allan, M. M., & Allan, A. (2017). Alexithymia among perpetrators of violent offences in Australia: Implications for Rehabilitation. *Australian Psychologist*, *52*, 230-237.

Su, J. C., Lee, R. M., Park, I. J., Soto, J. A., Chang, J., Zamboanga, B. L., ... & Seol, K. O. (2015). Differential links between expressive suppression and well-being among Chinese and Mexican American college students. *Asian American Journal of Psychology*, *6*, 15-24.

Subic-Wrana, C., Bruder, S., Thomas, W., Lane, R. D., & Köhle, K. (2005). Emotional awareness deficits in inpatients of a psychosomatic ward: A comparison of two different measures of alexithymia. *Psychosomatic Medicine*, *67*, 483–489.

Suslow, T., & Junghanns, K. (2002). Impairments of emotion situation priming in alexithymia. *Personality and Individual Differences*, *32*, 541–550.

Svaldi, J., Griepenstroh, J., Tuschen-Caffier, B., & Ehring, T. (2012). Emotion regulation deficits in eating disorders: A marker of eating pathology or general psychopathology? *Psychiatry Research*, *197*, 103–111.

Swart, M., Kortekaas, R., & Aleman, A. (2009). Dealing with feelings: Characterization of trait alexithymia on emotion regulation strategies and cognitive-emotional processing. *PLoS One*, *4*, e5751.

Taylor, G. J., Bagby, R. M., & Parker, J. D. (1992). The Revised Toronto Alexithymia Scale: Some reliability, validity, and normative data. *Psychotherapy and Psychosomatics*, *57*, 34–41.

Taylor, G. J., Bagby, R. M., & Parker, J. D. (1999). *Disorders of affect regulation: Alexithymia in medical and psychiatric illness*. UK: Cambridge University Press.

Taylor, G. J., Bagby, R. M., & Parker, J. D. (2003). The 20-item Toronto alexithymia scale: IV. Reliability and factorial validity in different languages and cultures. *Journal of Psychosomatic Research*, *55*, 277–283.

Taylor, G. J., Bagby, R.M., & Parker, J. D. (2016). What's in the name 'alexithymia'? A commentary on "Affective agnosia: Expansion of the alexithymia construct and a new opportunity to integrate and extend Freud's legacy". *Neuroscience and Biobehavioral Reviews*, *68*, 1006–1020.

Taylor, G. J., Parker, J. D., Bagby, R. M., & Bourke, M. P. (1996). Relationships between alexithymia and psychological characteristics associated with eating disorders. *Journal of Psychosomatic Research*, *41*, 561–568.

Taylor, G. J., Ryan, D., & Bagby, R. M. (1985). Toward the development of a new self report alexithymia scale. *Psychotherapy and Psychosomatics*, *44*, 191–199.

Taylor, G. J.,&Bagby, R.M. (2004). New trends in alexithymia research. *Psychotherapy and Psychosomatics*, *73*, 68–77.

Telch, C. F., Agras, W. S., & Linehan, M. M. (2001). Dialectical behavior therapy for binge eating disorder. *Journal of Consulting and Clinical Psychology*, *69*, 1061-1065.

Thompson, R. A., & Calkins, S. D. (1996). The double-edged sword: Emotional regulation for children at risk. *Development and Psychopathology*, *8*, 163-182.

Thorberg, F. A., Young, R. M., Sullivan, K. A., & Lyvers, M. (2009). Alexithymia and alcohol use disorders: A critical review. *Addictive Behaviors*, *34*, 237–245.

Thorberg, F. A., Young, R. M., Sullivan, K. A., Lyvers, M., Hurst, C., Connor, J. P., & Feeney, G. F. (2010). A confirmatory factor analysis of the Toronto alexithymia scale (TAS-20) in an alcohol-dependent sample. *Psychiatry Research*, *178*, 565–567.

Thorndike, R. L. (1936). Factor analysis of social and abstract intelligence. *Journal of Educational Psychology*, *27*, 231-233.

Tsaousis, I., Taylor, G., Quilty, L., Georgiades, S., Stavrogiannopoulos, M., & Bagby, R. M. (2010). Validation of a Greek adaptation of the 20-item Toronto alexithymia scale. *Comprehensive Psychiatry*, *51*, 443–448.

van der Velde, J., Servaas, M. N., Goerlich, K. S., Bruggeman, R., Horton, P., Costafreda, S. G., & Aleman, A. (2013). Neural correlates of alexithymia: A meta-analysis of emotion processing studies. *Neuroscience and Biobehavioral Reviews*, *37*, 1774–1785.

van Dijke, A., Ford, J. D., van der Hart, O., van Son, M., van der Heijden, P., & Bühring, M. (2010). Affect dysregulation in borderline personality disorder and somatoform disorder: Differentiating under-and over-regulation. *Journal of Personality Disorders*, *24*, 296-311.

van Kleef, G. A., Homan, A. C., Beersma, B., & van Knippenberg, D. (2010). On angry leaders and agreeable followers: How leaders' emotions and followers' personalities shape motivation and team performance. *Psychological Science*, *21*, 1827-1834.

van Sonderen, E., Sanderman, R., & Coyne, J. C. (2013). Ineffectiveness of reverse wording of questionnaire items: Let's learn from cows in the rain. *PLoS One*, *8*, e68967.

Vermeulen, N., Luminet, O., & Corneille, O. (2006). Alexithymia and the automatic processing of affective information: Evidence from the affective priming paradigm. *Cognition and Emotion*, *20*, 64–91.

Vine, V., & Aldao, A. (2014). Impaired emotional clarity and psychopathology: A transdiagnostic deficit with symptom-specific pathways through emotion regulation. *Journal of Social and Clinical Psychology*, *33*, 319-342.

Vorst, H. C., & Bermond, B. (2001). Validity and reliability of the Bermond–Vorst alexithymia questionnaire. *Personality and Individual Differences*, *30*, 413–434.

Waller, E., & Scheidt, C. E. (2006). Somatoform disorders as disorders of affect regulation: a development perspective. *International Review of Psychiatry*, *18*, 13-24.

Watters, C. A., Taylor, G. J., & Bagby, R. M. (2016). Illuminating the theoretical components of alexithymia using bifactor modeling and network analysis. *Psychological Assessment*, *28*, 627–638.

Watters, C. A., Taylor, G. J., Quilty, L. C., & Bagby, R. M. (2016). An examination of the topology and measurement of the alexithymia construct using network analysis. *Journal of Personality Assessment*, *98*, 649–659.

Watters, C., Taylor, G. J., Ayearst, L., & Bagby, R. M. (2016). Measurement invariance of the English and French language versions of the 20-item Toronto alexithymia scale. *European Journal of Psychological Assessment*, 1-8. https://doi.org/10.1027/1015-5759/a000365.

Way, I. F., Applegate, B., Cai, X., Franck, L. K., Black-Pond, C., Yelsma, P., ... Muliett, M. (2010). Children's alexithymia measure (CAM): A new instrument for screening difficulties with emotional expression. *Journal of Child and Adolescent Trauma*, *3*, 303–318.

Wechsler, D. (2008). *Wechsler Adult Intelligence Scale—Fourth Edition: Technical and interpretive manual*. San Antonio, TX: Pearson Assessment.

Weinberg, A., & Klonsky, E. D. (2009). Measurement of emotion dysregulation in adolescents. *Psychological Assessment*, 21, 616-621.

Weiss, N. H., Gratz, K. L., & Lavender, J. M. (2015). Factor structure and initial validation of a multidimensional measure of difficulties in the regulation of positive emotions: The DERS-positive. *Behavior Modification*, *39*, 431–453.

Werner, K., & Gross, J. J. (2010). Emotion regulation and psychopathology: A conceptual framework. In A. M. Kring, & D. M. Sloan (Eds.). *Emotion regulation and* *psychopathology: A transdiagnostic approach to etiology and treatment* (pp. 13–37). New York, NY: Guilford.

Williams, C., & Wood, R. L. (2010). Alexithymia and emotional empathy following traumatic brain injury. *Journal of Clinical and Experimental Neuropsychology*, *32*, 259–267.

Wiltink, J., Glaesmer, H., Canterino, M., Wolfling, K., Knebel, A., Kessler, H., . . . Buetel, M. E. (2011). Regulation of emotions in the community: Suppression and reappraisal strategies and its psychometric properties. *Psycho-Social Medicine*, *8*, 1–12.

Zech, E., Luminet, O., Rimé, B., & Wagner, H. (1999). Alexithymia and its measurement: Confirmatory factor analyses of the 20-item Toronto Alexithymia Scale and the Bermond-Vorst Alexithymia Questionnaire. *European Journal of Personality*, *13*, 511–532.

Zeitlin, S. B., & McNally, R. J. (1993). Alexithymia and anxiety sensitivity in panic disorder and obsessive-compulsive disorder. *The American Journal of Psychiatry*, *150*, 658–660.

Zelkowitz, R. L., & Cole, D. A. (2016). Measures of emotion reactivity and emotion regulation: Convergent and discriminant validity. *Personality and Individual Differences*, *102*, 123–132.

Zelkowitz, R. L., Cole, D. A., Han, G. T., & Tomarken, A. J. (2016). The incremental utility of emotion regulation but not emotion reactivity in nonsuicidal self injury. *Suicide and Life-Threatening Behavior*, *46*, 545–562.

Zhu, X., Yi, J., Yao, S., Ryder, A. G., Taylor, G. J., & Bagby, R. M. (2007). Cross-cultural validation of a Chinese translation of the 20-item Toronto alexithymia scale. *Comprehensive Psychiatry*, *48*, 489–496.

Zimmermann, P. (1999). Structure and functions of internal working models of attachment and their role for emotion regulation. *Attachment and Human Development*, *1*, 291–306.

Zinbarg, R. E., & Barlow, D. H. (1996). Structure of anxiety and the anxiety disorders: a hierarchical model. *Journal of Abnormal Psychology*, *105*, 181-193.

Zou, C., Plaks, J. E., & Peterson, J. B. (2017). Don't get too excited: Assessing individual differences in the down-regulation of positive emotions. *Journal of Personality Assessment*, 1–11. http://dx.doi.org/10.1080/00223891.2017.1339711.