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# Cognitive emotion regulation questionnaire – development of a short 18-item version (CERQ-short)

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## Abstract

Aim of the present study was to develop a short 18-item version of the Cognitive Emotion Regulation Questionnaire (CERQ; Garnefski, Kraaij, & Spinhoven, 2001). The distinction into nine different conceptual scales (Self-blame, Other-blame, Rumination, Catastrophizing, Positive refocusing, Planning, Positive reappraisal, Putting into perspective and Acceptance) was left intact, while the number of items per scale was reduced from four to two. Psychometric properties of the new two-item scales as well as their relationships with two indicators of emotional problems, i.e., depressive and anxiety symptoms are presented. Reliability and validity of the CERQ-short was supported by the results.

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*Keywords:* Cognitive-emotion-regulation; Cognitive-coping; CERQ; CERQ-short

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## 1. Introduction

Years of research have clearly shown the important role emotion regulation plays in our adaptation to stressful life events (Eisenberg, Fabes, Guthrie, & Reiser, 2000; Gross, 1998, 1999;

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Thompson, 1994). Research has shown that a particularly powerful category of emotion regulation involves the cognitive way of handling the intake of emotionally arousing information (e.g., Thompson, 1991; Ochsner & Gross, 2004, 2005). Because no instrument had been available to assess a broad set of specific cognitive emotion regulation strategies that people use in response to the experience of threatening or stressful life events, in 1999 the Cognitive Emotion Regulation Questionnaire was developed (CERQ; Garnefski, Kraaij, & Spinhoven, 2001). To date, the CERQ has been included in an increasing number of studies in various countries focusing on relationships between cognitive processes and mental health. Despite some variation across studies, cognitive strategies such as Self-blame, Rumination, Catastrophizing and Positive Reappraisal (inversely) have consistently been associated with negative emotions like depression, anxiety, stress and anger (e.g., D'Acremont & van der Linden, in press; Garnefski et al., 2001; Garnefski et al., 2002a; Garnefski & Kraaij, 2006; Kraaij, Garnefski, & van Gerwen, 2003; Jermann, van der Linden, d'Acremont, & Zermatten, 2006; Kraaij et al., 2003; Martin & Dahlen, 2005).

The CERQ has 36-items in total and consists of nine subscales: *Self-blame*, referring to thoughts of putting the blame of what you have experienced on yourself; *Other-blame*, referring to thoughts of putting the blame of what you have experienced on the environment or another person; *Rumination*, referring to thinking about the feelings and thoughts associated with the negative event; *Catastrophizing*, referring to thoughts of explicitly emphasizing the terror of what you have experienced; *Putting into Perspective*, referring to downgrading the importance of the event; *Positive Refocusing*, referring to thinking about positive experiences instead of thinking about the actual event; *Positive Reappraisal*, referring to thoughts of giving the event a positive meaning in terms of personal growth; *Acceptance*, referring to thoughts of resigning yourself to what has happened and *Planning*, referring to thinking about what steps to take and how to handle the negative event.

Lately, the number of requests to develop a short version of the CERQ has grown. Development of a short version is considered important, because of its assumed usefulness as a fast screening instrument in psychiatric patients and easier inclusion in large self-report research batteries where space is scarce. Purpose of the present study therefore was to create a short 18-item version of the Cognitive Emotion Regulation Questionnaire (CERQ-short) by reducing the number of items per scale from four to two. In order to maintain validity, the distinction into nine different conceptual scales was left intact. Psychometric properties of the new two-item scales as well as their relationships with two indicators of emotional problems, i.e., depressive and anxiety symptoms are presented. Results will be compared with the original 36-item version of the CERQ.

## 2. Method

### 2.1. Participants

The sample comprised 611 adults from the general population ranging between 18 and 65 years. The mean age was 41 years and 11 months, while 40% was male, 63% indicated to be married, engaged or living together and 35% were either single or divorced. The educational level ranged from primary school (4%), lower vocational or lower general secondary education (20%), intermediate vocational education (16%), higher general secondary and pre-university education (11%), to higher vocational and university education (48%).

## 2.2. Procedure

In the period between January and April 2000, questionnaires were sent to the home addresses of 2029 patients (one per household) of a general practitioner's office. In total, 630 persons returned their completed questionnaires. Because of ethical issues, it was not possible to obtain information on possible differences between the 630 persons that filled in the questionnaire and the 1377 that did not. Persons who filled in the questionnaire were guaranteed anonymity. For the purpose of the present study, only people between 18 and 65 years of age were selected, resulting in a final sample size of 611 persons.

## 2.3. Materials

### 2.3.1. Cognitive Emotion Regulation Questionnaire (CERQ)

The CERQ was developed in 1999 both on theoretical and empirical bases and was the first questionnaire explicitly measuring the specific cognitive emotion regulation strategies participants use in response to the experience of threatening or stressful life events (Garnefski, Kraaij, & Spinhoven, 2002b). The CERQ is a 36-item questionnaire, consisting of 9 conceptually distinct subscales, each consisting of four items and each referring to what someone thinks after the experience of threatening or stressful events: i.e., *Self-blame*, *Other-blame*, *Rumination*, *Catastrophizing*, *Putting into Perspective*, *Positive Refocusing*, *Positive Reappraisal*, *Acceptance* and *Planning*.

The CERQ can be used to measure cognitive strategies that characterize the individual's *style* of responding to stressful events as well as cognitive strategies that are used in a particular stressful event or situation, depending on the nature of the questions under study. The CERQ is designed to be a self-report questionnaire that can be administered to people aged 12 years and older as from that age, people can be considered to have the cognitive abilities to grasp the meaning of the items.

Items are measured on a 5-point Likert scale ranging from 1 ((almost) never) to 5 ((almost) always). Individual subscale scores are obtained by summing up the scores belonging to the particular subscale (ranging from 4 to 20). The higher the subscale score, the more a specific cognitive strategy is used.

The psychometric properties of the CERQ (both used as a more general coping style and as a more specific response to a specific event) have been proven to be good (Garnefski, Baan, & Kraaij, 2005; Garnefski et al., 2002b; Kraaij et al., 2003), with Cronbach's alpha coefficients in most cases well over .70 and in many cases even over .80. Furthermore, the CERQ has been shown to have good factorial validity, good discriminative properties and good construct validity (Garnefski et al., 2002b). In the present study the Cronbach's alpha of the subscales also appeared to be good, with alphas ranging from .62 to .85.

### 2.3.2. Depression and anxiety

Depressive and anxiety symptoms were measured by subscales of the SCL-90 (Symptom Check List; Derogatis, 1977; Dutch translation and adaptation by Arrindell & Ettema, 1986). The depression subscale consists of 16 items, assessing whether and to what extent the participants reported symptoms of depression; the anxiety subscale consists of 10 items, assessing whether and to what extent participants reported symptoms of anxiety. Answer categories of the items range from

1 (not at all) to 5 (very much). Scale scores are obtained by summing the items belonging to the scale. Previous studies have reported good psychometric properties with alpha-coefficients ranging from .82 to .93 for depression and from .71 to .91 for anxiety (Arrindell & Ettema, 1986).

#### 2.4. Statistical analyses

New two-item subscales were constructed by stepwise omission of the items with the highest ‘alpha if item deleted’ on the basis of reliability analyses results. Alpha reliabilities, means and standard deviations of the new scales are presented as well as the results of principal component analyses and Pearson correlations and multiple regression analyses with depression and anxiety symptoms as dependent variables. Results of the CERQ-short subscales will be compared to the original four-item CERQ subscales.

### 3. Results

#### 3.1. Construction of the CERQ-short scales

First, reliability analyses were performed on the nine original CERQ four-item subscales, subsequently the items with the highest ‘alpha if item deleted’ were omitted, then reliability analyses were performed again on the three-item scales and finally again the items with the highest ‘alpha if item deleted’ were omitted. Nine two-item subscales remained, leaving the original distinction into nine conceptually different scales intact.

#### 3.2. Reliabilities, means and standard deviations of the short scales

Cronbach’s alpha reliability coefficients were computed for the two-item subscales of the CERQ (CERQ-short). For comparison purposes, alpha reliabilities of the original CERQ were presented in the same table (see Table 1). Alpha reliabilities for the CERQ-short subscales were acceptably high. The lowest alpha was found for Self-blame (.67). All other alphas ranged from .73 to .81.

Table 1

Scale properties of the CERQ-short and the original CERQ: Cronbach’s alpha reliabilities; means and standard deviations

CERQ scales	$\alpha$ (short scales)	$\alpha$ (4 item scales)	$M$ (SD, short scales)	$M$ (SD, 4-item scales)
Self-blame	.68	.75	4.13 (1.81)	8.22 (2.96)
Acceptance	.73	.76	5.49 (2.14)	11.01 (3.53)
Rumination	.79	.83	4.98 (2.04)	10.46 (3.72)
Positive refocusing	.80	.85	4.54 (1.94)	10.01 (3.53)
Refocus on planning	.79	.86	6.05 (2.12)	13.03 (3.89)
Positive reappraisal	.81	.85	6.23 (2.25)	12.46 (4.07)
Putting into perspective	.79	.82	5.85 (2.16)	11.64 (3.91)
Catastrophizing	.81	.79	3.30 (1.64)	6.05 (2.43)
Other-blame	.77	.82	3.10 (1.53)	6.38 (2.69)

Table 1 also displays the means and standard deviations of the CERQ-short scales (and for comparison the means and standard deviations of the original 36-item CERQ as well). Just like the original CERQ, the theoretically more adaptive cognitive strategies (such as Positive Reappraisal, Planning and Putting into Perspective) were reported to have been used more often than the less adaptive strategies (such as Catastrophizing, Self-blame and Other-blame). The highest mean scores were found for the reporting of the cognitive strategies of ‘Planning’ and ‘Positive Reappraisal’. ‘Catastrophizing’ and ‘Other-blame’ were reported to have been used as cognitive strategy less often.

### 3.3. Principal Component Analysis

Principal Component Analysis was performed, with varimax rotation.<sup>1</sup> The factor loadings listed in the first column of Table 2 are the correlations between the selected items of the CERQ-short and the factors. Nine factors were extracted, together explaining 82.7% of the variance. Communalities ranged between .76 and .84. Factors were fully in accord with the a priori assignment of items to the scales, while all loadings on the a priori factors exceeded .78. To make comparison possible, Table 2 also shows the factor loadings of the items of the 36-item CERQ.

### 3.4. Correlations between subscales

Correlations between the CERQ-short subscales ranged between  $-.09$  (‘Catastrophizing’ and ‘Putting into Perspective’) and  $.54$  (‘Positive Reappraisal’ and ‘Planning’), with a mean correlation coefficient of  $.19$  (Table 3). For comparison: the original CERQ subscale correlations ranged between  $-.08$  (‘Catastrophizing’ and ‘Positive Reappraisal’) and  $.69$  (‘Positive Reappraisal’ and ‘Planning’), with a mean correlation coefficient of  $.25$ .

### 3.5. Relationships between CERQ-short subscales at measurements 1 and depression and anxiety symptoms at measurement 1 and follow-up

To study the relationships between CERQ-short scales and symptoms of depression and anxiety at measurements 1 and 2, Pearson correlations were calculated (no table). Correlations with depression ranged from  $-.13$  (Putting into Perspective) to  $.53$  (Catastrophizing). For comparison: correlations between the original CERQ scales and depression ranged from  $-.21$  (Positive Reappraisal) to  $.53$  (Catastrophizing). Correlations between CERQ-short scales and symptoms of Anxiety ranged from  $-.13$  (Positive Reappraisal) to  $.50$  (Catastrophizing). The correlations between original CERQ scales and symptoms of anxiety ranged from  $-.23$  (Positive Reappraisal) to  $.54$  (Catastrophizing).

In addition, multiple regression analyses were performed with depression and anxiety symptoms as dependent variables and the nine CERQ-short scales as independent variables (Table 4).

Table 4 shows that both regression models were significant ( $p < 0.001$ ). Percentages of explained variance were 38% and 33% for the prediction of depression scores and anxiety, respec-

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<sup>1</sup> CFA was preferred to EFA, to be able to make comparison with the factor analysis of the original CERQ scales possible.

Table 2

Factor structure of the CERQ-short and the original CERQ; items listed by a priori assignment to subscales

Scale name and items	Factor loadings	
	CERQ-short	CERQ
<b>Self-blame</b>		
I feel that I am the one to blame for it	–	.70
I feel that I am the one who is responsible for what has happened	.80	.71
I think about the mistakes I have made in this matter	–	.55
I think that basically the cause must lie within myself	.87	.80
<b>Acceptance</b>		
I think that I have to accept that this has happened	.88	.73
I think that I have to accept the situation	.79	.70
I think that I cannot change anything about it	–	.66
I think that I must learn to live with it	–	.69
<b>Focus on thought/rumination</b>		
I often think about how I feel about what I have experienced	.84	.75
I am preoccupied with what I think and feel about what I have experienced	.84	.77
I want to understand why I feel the way I do about what I have experienced	–	.66
I dwell upon the feelings the situation has evoked in me	–	.68
<b>Positive refocusing</b>		
I think of nicer things than what I have experienced	–	.76
I think of pleasant things that have nothing to do with it	.90	.85
I think of something nice instead of what has happened	.86	.83
I think about pleasant experiences	–	.67
<b>Refocus on planning</b>		
I think of what I can do best	–	.69
I think about how I can best cope with the situation	–	.75
I think about how to change the situation	.81	.74
I think about a plan of what I can do best	.86	.78
<b>Positive reappraisal</b>		
I think I can learn something from the situation	.78	.67
I think that I can become a stronger person as a result of what has happened	.83	.59
I think that the situation also has its positive sides	–	.64
I look for the positive sides to the matter	–	.73
<b>Putting into perspective</b>		
I think that it all could have been much worse	–	.62
I think that other people go through much worse experiences	–	.77
I think that it hasn't been too bad compared to other things	.85	.68
I tell myself that there are worse things in life	.82	.70
<b>Catastrophizing</b>		
I often think that what I have experienced is much worse than what others have experienced	–	.75
I keep thinking about how terrible it is what I have experienced	.86	.64
I often think that what I have experienced is the worst that can happen to a person	–	.70
I continually think how horrible the situation has been	.84	.59

Table 2 (continued)

Scale name and items	Factor loadings	
	CERQ-short	CERQ
Other-blame		
I feel that others are to blame for it	–	.75
I feel that others are responsible for what has happened	.85	.82
I think about the mistakes others have made in this matter	–	.72
I feel that basically the cause lies with others	.90	.83

Table 3

Pearson correlations between CERQ-short scales

CERQ subscales	1	2	3	4	5	6	7	8
1. Self-blame	–	–	–	–	–	–	–	–
2. Acceptance	.29***	–	–	–	–	–	–	–
3. Rumination	.21***	.30***	–	–	–	–	–	–
4. Positive refocusing	.06	.28***	.10*	–	–	–	–	–
5. Planning	.34***	.32***	.28***	.26***	–	–	–	–
6. Positive reappraisal	.27***	.43***	.25***	.31***	.54***	–	–	–
7. Putting into perspective	.29***	.33***	.00	.42***	.43***	.48***	–	–
8. Catastrophizing	.11**	.12**	.55***	.02	.09*	.02	–.09	–
9. Other-blame	–.02	.07	.30***	.07	.11**	.00	.00	.43***

\*\*\*  $p < .001$ .

Table 4

Relationships between cognitive emotion regulation strategies of the CERQ-short and the original CERQ with symptoms of depression and anxiety: Multiple regression analysis

	Depressive symptoms		Anxiety symptoms	
	Beta (short scales)	Beta (4-item scales)	Beta (short scales)	Beta (4-item scales)
Self-blame	.15***	.25***	.14***	.18**
Acceptance	.03	.07	.04	.05
Rumination	.31***	.28***	.19***	.23***
Positive refocusing	.04	–.01	.10*	.08
Planning	–.04	–.05	–.02	.02
Positive reappraisal	–.20***	–.35***	–.22***	–.40***
Putting into perspective	–.06	–.01	–.06	.00
Catastrophizing	.32***	.29***	.35***	.36***
Other-blame	.05	.08	.07	.05
$R^2$	.38***	.44***	.33***	.42***

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

tively. The most important significant ‘predictors’ of both depressive symptoms and anxiety symptoms were Catastrophizing, Rumination, Self-blame (related to the reporting of more symptoms)

and Positive Reappraisal (related to the reporting of fewer symptoms). These results were comparable to the regression models for the original CERQ scales (see Table 4).

#### 4. Conclusion

In this study the psychometric properties of the CERQ-short were tested in a large adult general population sample. Whereas the distinction into nine different conceptual scales was left intact, the number of items per scale was reduced from four to two. The results of Principal Component Analyses provided strong empirical support for the allocation of items to the short subscales, while the reliabilities of the scales were found to be acceptably high. They were, however, somewhat lower than for the original 36-item version, but this can be considered as a logical, statistical consequence of the reduction of items per scale. Relationships with outcome measures were comparable to reported results with the original CERQ: Rumination, Self-blame and Catastrophizing were related to more depression and anxiety symptoms, while Positive Reappraisal was related to fewer symptoms, supporting the validity of the CERQ-short. For extensive discussions on the implications for theory and intervention as well as for directions and challenges for future research, we refer to our earlier studies (e.g., Garnefski et al., 2001, 2002a; Garnefski & Kraaij, 2006).

Some limitations should be mentioned. The only measures included to study external validity were the depression and anxiety scales of the SCL-90. Although these measures have provided initial support for the validity of the CERQ-short, in future relationships with additional measures of depression and anxiety should be studied in order to draw more firm conclusions. In addition, it is important to realize that, generally speaking, overall validity may suffer from reduction of items and that a measure containing a greater number of items might provide more stability. If time and space are available, therefore, the 36-item version should definitely be preferable to the short version. However, the present study has clearly shown that the CERQ-short might be a valuable and reliable tool that can be used in assessment or self-report research, when there is not enough time and space available to include the 36-item version.

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