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Abstract The present study describes the development of the child version of the Cognitive Emotion Regulation Questionnaire (CERQ-k). Like the adult version of the CERQ, the CERQ-k measures nine cognitive emotion regulation strategies that children may use after having experienced negative life events. The original CERQ was considered suitable for adults and adolescents aged 12 and older. The CERQ-k was constructed for children of 9, 10 and 11 years of age. The present study describes some psychometric properties of the CERQ-k and relationships with measures of depression, fearfulness and worry among 717 primary school youngsters. Principal component analyses confirmed the allocation of most items to subscales, while Cronbach's alphas of most subscales exceeded 0.70. Cognitive emotion regulation strategies were found to be related to the reporting of symptoms of depression, fearfulness and worry, which provided some evidence for criterion-related validity.

Key words cognitive-coping – cognitive-emotion-regulation – depression – fearfulness – worry – children – early-adolescents

Introduction

Cognitive emotion regulation can be understood as the cognitive way of managing the intake of emotionally arousing information [9, 27, 29]. The regulation of emotions through cognitions is inextricably associated with human life and helps to manage emotions after the experience of stressful events. In all stages of life, people have to deal with a wide range of stressors and challenges to adapt to the world. Even infants attempt to modify their environment in simple and primitive ways. As children grow older, their emotion regulation repertoire increases and shifts from primarily external, behaviourally oriented emotion regulation strategies to more internal, cognitively based ones [1, 3, 5, 15, 27]. By the age of eight or nine, young children have learned to regulate their emotions by means of cognitions or thoughts about themselves, their feelings or others [14, 20, 25]. For example, when experiencing a negative event, some children may have thoughts of blaming themselves, while others may rather blame someone else.

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Children may also focus on their sadness by ruminating, or may emphasize the terror of the event by catastrophizing. Others may have thoughts of acceptance, planning, positively reappraise the situation, or else just think about more pleasant issues instead of the actual events. These cognitive transitions in childhood may have far-reaching implications for the psychological development of youngsters [14, 26].

Obviously, the concept of conscious, cognitive emotion regulation is narrowly related to the concept of cognitive coping. Important difference between the two perspectives is that the widely accepted problem-focused and emotion-focused dimensions of coping both include a mixture of cognitive and behavioural strategies, while the cognitive emotion regulation theory is based on the assumption that thinking and acting refer to different processes and therefore considers cognitive strategies in a conceptually pure way, separate from behavioural strategies [9, 11].

Although it has been widely assumed that the regulation of emotions through specific cognitions in children is an important issue with regard to their mental health, we do not know much about how exactly cognitions regulate emotions in children and how this may affect the course of emotional development. One reason for this gap in existing knowledge is that to date no instruments are available for the measurement of cognitive emotion regulation in children. To make it possible to study cognitive strategies in children, the present article will focus on the development of such an instrument, based on an existing instrument for the measurement of various conscious cognitive emotion regulation strategies in adolescents and adults.

About half a decade ago, it was observed that no self-report instruments were available that measured the cognitive components of emotion regulation in people [9]. Following that observation, in 2001 the Cognitive Emotion Regulation Questionnaire (CERQ) was developed [9, 10] to measure the conscious cognitive emotion strategies that adults and adolescents may use. As the CERQ was designed to be a self-report questionnaire, unconscious cognitive emotion regulation strategies or defense mechanisms such as denial, projection, distortion or displacement, were not included. Nine (conscious) cognitive emotion regulation strategies were distinguished within the CERQ: Self-blame, other-blame, rumination, catastrophizing, putting into perspective, positive refocusing, positive reappraisal, acceptance and planning (e.g., 8). These dimensions were defined either by taking out or reformulating the cognitive dimensions of existing coping measures (as far as they existed, 24, 'transforming' non-cognitive coping strategies into cognitive dimensions or adding new strategies on theoretical grounds (for a more elaborated explanation of the way the particular dimensions were chosen, see 9–11).

A number of previous studies have reported positively on the internal consistencies, factorial validity, construct validity and criterion-related (or predictive) validity of the CERQ scales [10], while strong relationships were found between the use of specific cognitive strategies and psychopathology [6–12, 18, 19]. The strongest relationships were found between the cognitive emotion regulation strategies of rumination, catastrophizing and self-blame and the reporting of symptoms of depression. This might imply that by using these strategies, people may be more vulnerable to developing symptoms of psychopathology in response to negative life events than others [10]. Other outcomes suggested that people may more easily tolerate or master negative life experiences by using other cognitive styles, such as Positive Reappraisal. Without exceptions, the results indicate that the study of the relationships between different cognitive strategies and psychological outcomes is indeed an important research area. They also imply that important targets for intervention might be found on the basis of cognitive emotion regulation research and that cognitive emotion regulation strategies as such may represent an important central theoretical issue in the explanation of symptomatology of mental disorders [9, 11].

The question is whether the same conclusions will hold for children below the age of 12. First aim of the present study therefore was to develop the child version of the Cognitive Emotion Regulation Questionnaire (CERQ-k) for children aged about 9-years and older by simplifying the language and shortening the items of the adolescent and adult version. Second aim was to examine some psychometric properties by calculating internal consistencies of the nine subscales, examining the factorial structure and by studying relationships between cognitive emotion regulation strategies and emotional problems (depression, fears and worry) in the child sample (criterion-related validity).

Based on the results of earlier studies in older samples [9–11], it was expected that the psychometric properties of the CERQ-k would be in line with those of the original CERQ, with both the factorial structure and internal consistencies confirming the distinction into nine subscales. Further, it was expected that criterion-related validity would be confirmed by strong positive relationships between the reporting of symptoms of emotional problems and the cognitive strategies of rumination, catastrophizing and self-blame, and a strong negative relationship between psychopathology and positive reappraisal.

Method

Participants and procedure

Participating in this study were 717 children: 394 boys and 323 girls with a mean age of 10 years and 3 months (SD = 9 months, range 9–11). The children were recruited from 11 primary public schools in a medium-sized town in the Netherlands (43,200 inhabitants). Written parental consent was obtained for all participating children. We asked the children to complete the questionnaires in the classroom during regular school hours. Children, who were absent at the day of data collection, could fill out the questionnaires at some other moment. The sample consisted of 5% pupils coming from ethnic minorities. As regards their home situations: 89.7% of the sample were living in intact families (father, mother and children), 7.4% were living in one-parent families and 1.1% were living in other 'home' settings (foster parents, foster home, with others).

Materials

Cognitive emotion regulation

Cognitive emotion regulation was measured by the cognitive emotion regulation questionnaire – kids version (CERQ-k). This questionnaire was developed to assess what children tend to think after experiencing negative life events. The CERQ-k is the child version of the Cognitive Emotion Regulation Questionnaire (CERQ) [10]. The original CERQ was designed as a self-report questionnaire to be administered to people aged 12 and older, assessing what people tend to think after the experience of threatening or stressful negative life events. The CERQ can be used to measure cognitive strategies in response to major (negative) life events, as well as the cognitive response to less severe events, depending on the questions of the study. The original process of development of the CERQ is described in detail in Garnefski et al. [9, 10]. All subscales have been shown to have good internal consistencies, ranging from 0.68 to 0.85.

The CERQ-k was constructed by rephrasing the items of the CERQ to fit the cognitive abilities of 9-to-11 year old children enabling them to grasp the meaning of the items. Just like the original CERQ, the CERQ-k includes 9 conceptually distinct scales all consisting of 4 items referring to what children think after the experience of threatening or stressful negative life events. The content of the 9 subscales, as well as the number of items and the way of scoring were left unchanged compared to the original CERQ version.

The CERQ-k (just like the original CERQ) can be used to measure cognitive strategies that characterize the individual's style of responding to negative life 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. In the present study, questions are about children's cognitive style. The following instruction was written down (which was an adapted version (for children) of the original instruction [9]):

> Sometimes nice things happen in your life and sometimes unpleasant things might happen. When something unpleasant happens, you can think about it for a long time. When something unpleasant happens to you, what do you usually think?

In case of using the CERQ-k to measure cognitive responses to a specific life event, the introduction should be adapted.

The CERQ-k consists of 36 items. The answer categories for each of the items range from 1 [(almost) never] to 5 [(almost) always]. A subscale score can be obtained by summing the four items, the minimal score is 4 and the maximum score 20. The higher the subscale score, the more the specific cognitive strategy is used. The subscales were: *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 others; *Acceptance*, referring to thoughts of accepting what you have experienced and resigning yourself to what has happened; *Planning*, referring to thinking about what steps to take and how to handle the negative event; *Positive Refocusing*, referring to thinking about joyful and pleasant issues instead of thinking about the actual event; *Rumination or focus on thought*, referring to thinking about the feelings and thoughts associated with the negative event; *Positive reappraisal*, referring to thoughts of attaching a positive meaning to the event in terms of personal growth; *Putting into perspective*, referring to thoughts of playing down the seriousness of the event or emphasizing the relativity when comparing it to other events; and *Catastrophizing*, referring to thoughts of explicitly emphasizing the terror of an experience. The psychometric properties of the CERQ-k were examined in the present study.

Emotional problems

Depression

Depressive symptoms were measured by the Dutch version of the Children's Depression Inventory (CDI;

16, 28). The CDI consists of 27 items, from which the item concerning suicidal thoughts was excluded out of concern for the possible distressing effect of it. In each item, children select one of three statements that characterized them best during the past 3 weeks. The statements are graded in order of increasing severity from 0 to 2. The internal consistency of the scale has been shown to be good (alpha = 0.80) just as the test–retest reliability (r = 0.81). The scale also shows high correlations with related questionnaires [30].

Fearfulness

Fears were measured by the Dutch version of the Revised Fear Survey Schedule for Children (FSSC-R; 22, 23) to get a broad view of children's fearfulness. The FSSC-R asks children to indicate on a three point scale 0 = *not at all* to 2 = *very much*) how much they fear specific stimuli or situations. The scale contains 80 items. The scale consists of five subscales: Fear of danger and death, fear of failure and criticism, fear of the unknown, fear of small animals and medical fears. By summing up the subscale scores, a total fear score can be obtained. Research has shown that the subscales and total scale have good internal consistencies (Cronbach's alpha approximately 0.90 for all scales) and high test–retest reliabilities (Pearson's r approximately 0.70 for all scales) [23].

Worry

The tendency to worry was measured by the Non-productive Thoughts Questionnaire for Children (NPDK; 16). The scale consists of 10 statements representative of the worrying process. The child has to mark on a three point scale whether the statement is not true (0), sometimes true (1) or often true (2) (this scoring was reversed for one item that was formulated positively). The internal consistency of the scale proved to be good (Cronbach's alpha = 0.84).

Results

Principal component analyses

Principal component analysis (PCA) was performed with oblimin rotation to allow for correlations among factors. Nine factors were extracted, of which eight factors had an eigenvalue > 1. Together, they explained 57.6% of the variance. Communalities of the variables ranged between 0.41 and 0.68. The results are shown in Table 1, with items listed by a priori assignment to subscales. The factor loadings presented in the first column are the correlations between the items and the factors based on the factor structure matrix. Most factors were in accord with the a priori assignment of items to scales. For 29 of the 36 items, the conclusion held that the highest loading was on the scale to which they theoretically belonged. The second column shows for the other seven items on which factor the highest loading was found. Strongest scales were: self-blame, positive refocusing, putting into perspective, planning and blaming others.

Correlations between subscales

Correlations among the emotional problem scales of depression, worry and fearfulness were moderately high, ranging between 0.25 (depression and fearfulness) and 0.49 (Worry and Fearfulness). Correlations between emotional problem scales and CERQ scales ranged between −0.06 (depression and refocus on planning) and 0.49, indicating (negatively) low to moderate correlations. Correlations among CERQ subscales ranged between 0.03 ('catastrophizing' and 'positive refocusing') and 0.58 ('positive reappraisal' and 'refocus on planning') with a mean Pearson correlation coefficient of 0.35. For the majority of combinations, moderate correlations between the subscales were found (Table 2).

Reliabilities of the scales (Cronbach's alpha)

Cronbach's alpha reliability coefficients were computed (Table 3). Reliabilities of the depression, worry and fearfulness scales were high; 0.81, 0.84 and 0.97, respectively. As regards the subscales of the CERQ, only the subscale of Acceptance (α = 0.62) had an alpha below 0.65. Three subscales had alphas between 0.65 and 0.70, i.e. catastrophizing, putting into perspective and positive reappraisal. The other subscales had alpha's ranging between 0.70 and 0.80, with the highest reliabilities found for self-blame, other-blame and rumination (each: 0.79). As the height of the alpha reliabilities is dependent on the number of items per subscale and the number of items per subscale is relatively small (each subscale has 4 items), these alpha reliabilities can be considered moderate to good. In none of the scales, higher alphas were obtained after exclusion of (one or more) items.

Means and standard deviations

Table 3 also displays the means and standard deviations of the emotional problems and CERQ scales. The highest mean scores were found for the reporting of the cognitive coping strategies of planning, putting into perspective and positive refocusing. The lowest

Table 1 Factor structure of the child version of Cognitive Emotion Regulation Questionnaire (CERQ-k); items listed by a priori assignment to subscales

Scale name and items	Factor loadings[a]	Highest loading[b]
1. Self-blame		
I think that I am to blame	0.69	
I think that I have been stupid	0.79	
I think that it's my own fault	0.75	
I think that it's all caused by me	0.74	
2. Acceptance		
I think that I have to accept it	(0.21)	7
It just happened; there is nothing I can do about it	(0.45)	7
I think that I can't change it	0.7	
I think that I can't do anything about it	0.72	
3. Rumination		
Again and again, I think of how I feel about it	−0.57	
I often think of what I am thinking and feeling about it	−0.54	
All the time, I think that I want to understand why I feel that way	(−0.31)	1
I often think of how I feel about what happened	(−0.48)	1
4. Positive refocusing		
I think of nicer things	0.78	
I think of nicer things that have nothing to do with it	0.81	
I think of something nice and not about what happened	0.76	
I think of nice things that have happened to me	0.74	
5. Planning		
I think about what would be the best for me to do	0.52	
I think of how I can cope with it	0.62	
I think of how I can change it	0.76	
I think of what I can do best	0.68	
6. Positive reappraisal		
I think that I can learn from it	−0.73	
I think that it makes me feel 'older and wiser'	−0.76	
I think that there are good sides to it as well	(−0.35)	1
I think that it's not all bad	(−0.29)	1
7. Putting into perspective		
I think that worse things can happen	−0.45	
I think that worse things happen to others	−0.61	
I think that it's not as bad as other things that could happen	−0.61	
I think that there are worse things in the world	−0.56	
8. Catastrophizing		
I often think that it's much worse than what happens to others	(0.17)	4
Again and again, I think about how terrible it all is	0.58	
All the time, I think that this is the worst thing that can happen to you	0.61	
I often think about how horrible the situation was	0.64	
9. Other-blame		
I think that others are to blame	0.74	
I think that others have been stupid	0.79	
I think that it's the fault of others	0.78	
I think that it's all caused by others	0.78	

[a] Factor loadings between brackets reflect items that had a higher loading on one of the other factors
[b] Numbers reflect the factor on which the highest loading of the specific item was found

scores were found for blaming others, self-blame and catastrophizing.

Multiple regression analyses

Three Multiple regression analyses (MRAs) were performed, with method enter. Dependent variables were depression, worry and fearfulness. Two sets of variables were included as independent variables: background characteristics (gender and age, expressed in months) and CERQ scales (Table 4).

The MRA with depression as dependent variable showed that, while controlling for all other variables, gender and age did not make an independent contribution to the 'prediction'. Unique significant, positive relationships were found for the cognitive emotion regulation strategies of self-blame, catastrophizing and other-blame, indicating that the more these strategies were used the more symptoms of depression were reported. Unique significant, negative relationships were found for positive refocusing and refocus on planning, meaning that the more these strategies were used, the fewer symptoms were found.

Table 2 Pearson product-moment correlations among CERQ scales and emotional problem scales

Subscales	Emotional problems			CERQ scales							
	Dep *r*	Wor *r*	Fear *r*	1 *r*	2 *r*	3 *r*	4 *r*	5 *r*	6 *r*	7 *r*	8 *r*
Emotional problems											
Depression (Dep)	–										
Worry (Wor)	0.45***	–									
Fearfulness (Fear)	0.25***	0.49***	–								
CERQ scales											
1. Self-blame (Sb)	0.25***	0.48***	0.30***	–							
2. Acceptance (Acc)	0.14***	0.34***	0.24***	0.42***	–						
3. Rumination (Rum)	0.18***	0.47***	0.32***	0.52***	0.49***	–					
4. Positive refocusing (Ref)	0.25***	0.15***	0.05	0.06	0.20***	0.16***	–				
5. Planning (Plan)	−0.06	0.17***	0.16***	0.39***	0.35***	0.55***	0.42***	–			
6. Positive reappraisal (Reap)	0.01	0.12**	0.10**	0.37***	0.42***	0.51***	0.42***	0.58***	–		
7. Putting into persp. (PiP)	−0.03	0.12**	0.15***	0.35***	0.37***	0.37***	0.49***	0.47***	0.56***	–	
8. Catastrophizing (CA)	0.34***	0.49***	0.31***	0.51***	0.49***	0.55***	0.03	0.32***	0.37***	0.27***	–
9. Other-blame (Ob)	0.25***	0.18***	0.10**	0.14***	0.30***	0.27***	0.04	0.17***	0.26***	0.17***	0.38***

* $P < 0.05$. ** $P < 0.01$. *** $P < 0.001$

Table 3 Scale properties of the CERQ: Cronbach's alpha reliabilities; Means and Standard deviations

Subscales	α	M	SD	Range
Emotional problems				
Depression	0.81	34.55	5.78	26–58
Worry	0.84	7.54	4.46	0–20
Fearfulness	0.97	34.85	26.00	0–137
CERQ scales				
Self-blame	0.79	8.23	3.40	4–20
Acceptance	0.62	9.08	3.22	4–20
Rumination	0.73	8.97	3.54	4–20
Positive refocusing	0.79	12.24	4.36	4–20
Planning	0.75	10.74	3.89	4–20
Positive reappraisal	0.67	9.75	3.59	4–20
Putting into perspective	0.68	11.06	3.84	4–20
Catastrophizing	0.67	8.22	3.42	4–20
Other-blame	0.79	7.00	3.10	4–20

Table 4 Relationships between CERQ scales and emotional problem scales: Multiple Regression Analyses (Method = enter)

	Depression			Worry			Fearfulness		
	β	*T*	*P*	β	*t*	*P*	β	*t*	*P*
Gender and age									
Gender	−0.01	0.15	0.880	−0.17	5.79	.000	−0.35	10.39	0.000
Age	0.04	1.31	0.190	−0.01	0.26	0.798	−0.02	0.48	0.629
CERQ subscales									
Self-blame	0.17	3.91	0.000	0.22	6.08	0.000	0.10	2.37	0.018
Acceptance	−0.02	0.47	0.636	0.09	2.49	0.013	0.05	1.32	0.186
Rumination	0.06	1.20	0.233	0.27	6.37	0.000	0.15	3.21	0.001
Positive refocusing	−0.19	4.56	0.000	−0.19	5.38	0.000	0.02	0.42	0.675
Planning	−0.16	3.47	0.001	−0.03	0.71	0.478	−0.01	0.28	0.780
Positive reappraisal	−0.02	0.37	0.708	−0.14	3.27	0.001	−0.12	2.52	0.012
Putting into perspective	−0.01	0.30	0.768	0.03	0.84	0.399	0.05	1.15	0.252
Catastrophizing	0.24	5.26	0.000	0.23	5.85	0.000	0.17	3.86	0.000
Other-blame	0.17	4.49	0.000	0.01	0.37	0.710	0.01	0.27	0.785
Model	$F(11,695) = 19.30$; $P = 0.000$			$F(11,695) = 47.91$; $P = 0.000$			$F(11,695) = 24.02$; $P = 0.000$		
Explained variance (R^2)	23.4%			43.1%			27.5%		

Both the MRA with worry and fearfulness as dependent variables found independent (negative) effects for gender (not for age), indicating that being a girl is related to higher worry and fearfulness scores. In addition, the MRA results for worry also showed unique, positive relationships for the cognitive strategies of self-blame, acceptance, rumination and catastrophizing and unique, negative relationships for positive refocusing and positive reappraisal. The MRA with Fearfulness as dependent variable found significant effects for self-blame, rumination, catastrophizing, and positive reappraisal (the latter a negative relationship).

Discussion

Aim of the present study was to develop the child version of the cognitive emotion regulation questionnaire to be able to assess children's cognitive emotion regulation strategies. Like the adult version of the CERQ, the CERQ-k measures nine different cognitive strategies that children may use after the experience of a negative life event. Dimensional structure and internal consistencies were examined. In addition, relationships with depression, fearfulness and worry were studied to find some evidence for criterion-related validity.

As regards the *dimensional structure*: generally speaking, the nine factor solution was found to be consistent with the intended theoretical structure of the CERQ-k. There were however two deviations: one of the nine eigenvalues was lower than one and seven items did not have their highest loadings on the scale to which they theoretically belonged. Still, altogether the results suggest that the distinction of the CERQ-k into nine separate subscales was justifiable. First, all nine subscales showed good *internal consistencies* with most alpha's ranging between 0.70 and 0.80. Second, although correlations among subscales were moderately high, they never reached levels of collinearity, demonstrating that the intended scales could be distinguished as separate, reliable subscales. Earlier studies reporting on the factorial structure of the original CERQ in other samples had already shown that its factorial structure was invariant with respect to age and gender [10]. The present findings give some evidence for the *factorial validity* of the CERQ-k scales in comparison to the original CERQ scales.

In addition, relationships between cognitive emotion regulation strategies and measures of depression, fearfulness and worry were examined. It was shown that considerable percentages of the variance in the symptoms in children could be explained by the use of cognitive emotion regulation strategies. Both common and unique 'predictors' were identified. As regards the common 'predictors', self-blame and catastrophizing showed strong relationships with all three indicators of psychopathology in children, while rumination showed relationships with two of the psychopathology measures: worry and fearfulness. Common results were also found for positive refocusing and positive reappraisal. Positive refocusing had strong negative relationships with both depression and worry, while positive reappraisal had strong negative relationships with worry and fearfulness, with the negative sign of the relationship suggesting a protective value. In addition, unique relationships were found between acceptance and worry, planning and depression, and other-blame and depression. These results fit in with the findings of other studies showing relationships between adolescent or adult psychopathology and the apparently less adaptive styles of rumination, catastrophizing and self-blame [2, 7, 9, 21, 28]. It also appeared in earlier studies that 'Positive Reappraisal' and 'Positive Refocusing' were negatively related to measures of psychopathology [4, 7, 9]. On the basis of the present study, the conclusion can be reached that the relationships between rumination, self-blame, catastrophizing, lack of positive reappraisal, lack of positive refocusing and symptoms of psychopathology also hold in children aged 9 to 11, providing some evidence for *criterion-related validity*. Another finding was that the cognitive strategies of putting into perspective and positive refocusing were reported most often by the children, while the strategies of self-blame, other-blame and catastrophizing were reported least often to have been used by this group. This result was roughly comparable to the reporting of cognitive strategies in adolescents aged 12 years and older and adults [7]. In adults and elderly, however, lower positive refocusing scores were found [7].

A limitation of the study was that the data did not give opportunity to study other forms of validity of the CERQ-k, such as content validity or construct validity. Earlier studies with the original CERQ had shown that its correlations with measures of coping, personality, self-esteem and self-efficacy were in line with the expectations [10], providing evidence for *construct validity*. To be able to draw such conclusions for the CERQ-k, future studies should be set up in early adolescent populations to study relationships between the CERQ-k scales and other conceptually-related measures.

Test–retest data were also not assembled in the present study. Test-retest data of the original CERQ found test–retest reliabilities of the subscales (after a 5-month period) ranging between .41 and .59, which suggested that cognitive emotion regulation strategies were relatively stable styles, although not as stable as

personality traits. It is important to obtain test–retest data in future studies in early adolescent populations as well.

Another limitation of the design was that the detection of depression, worry and fearfulness symptoms as well as the assessment of cognitive emotion regulation strategies was made on the basis of self-reported evaluations, which may have caused a certain bias. The results of this study may be an under- or overestimation of the extent to which cognitive emotion regulation strategies are applied in reality. It should also be acknowledged that by using self-report measures the results may be biased by individual response styles. In addition, because of the self-report character, the CERQ-k exclusively focuses on the conscious, cognitive strategies that children use. It might be argued that also unconscious cognitive strategies and defense mechanisms (such as projection, denial, distortion and displacement) fall under the broader definition of cognitive emotion regulation. It is therefore important for future studies to address research questions concerning relationships between cognitive emotion regulation and emotional and behavioural problems by using both self-reported and other forms of data collection, such as interviews, expert judgements or experimental research.

As the CERQ-k was meant to be the child version of the CERQ, the same nine theoretical constructs that were included in the original version, were also included in the child version. As the CERQ was originally constructed for adolescents and adults, the possibility exists that theoretical constructs with specific relevance to children have been overlooked. Perhaps, qualitative research on cognitive emotion regulation in children could provide information about the extent to which additional, specific child-related cognitive strategies might occur.

In the present study, the CERQ-k was used to measure children's general response styles. Limitation of that approach is that children may have specific life events in their minds influencing their response patterns. It is important to note that the CERQ-k can also be used to measure children's specific response to specific stressors. In future research, it is important to include specific samples of children who have experienced a specific negative life events or trauma in order to study the conscious cognitive strategies used in a specific context, situation or in response to a specific stressor. In addition, prospective design studies should be set up in the future studying cognitive emotion regulation in children over time and across diverse types of negative life events in the same persons.

It should also be noted that the present child sample was a general population sample, and that relations among variables may be different in children with mental health problems or more severe disorders [13]. In addition, the results of the present study were based on cross-sectional data. It is important to acknowledge that no conclusions can be drawn about causal pathways or directions of influence. Still, whatever the directions of influence may be: it is clearly shown that the use of certain cognitive emotion regulation strategies and emotional problems are *related* issues. Especially, the relationships between the use of the cognitive emotion regulation strategies of self-blame, catastrophizing and rumination and the reporting of emotional problems suggest that the existence of such symptoms might form an indication for the existence of 'nonadaptive' strategies of cognitive emotion regulation in children. Based on this study, clues for intervention in children might be suggested such as that 'nonadaptive' strategies (e.g., self-blame, catastrophizing and rumination) should be challenged, while more 'adaptive' strategies (e.g., positive reappraisal and positive refocusing) should be applied, at the same time.

In conclusion, the relationship between cognitive emotion regulation and maladjustment in children seems to be an important direction for future research, possibly carrying important implications for the focus and content of intervention and prevention of mental health problems in children. In order to be able to study in depth such relationships it is important to have a good and reliable instrument to measure children's cognitive emotion regulation strategies. The present study has described the development of the CERQ-k and some of its psychometric properties. The exploratory character of the results makes replication, thorough testing and further development (e.g. testing of content and construct validity) necessary. Prospective elements should be included in the model to be able to determine test–retest reliabilities. However, if our results can be confirmed, the newly developed CERQ-k can be a valuable tool in the process of attaining these goals.

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