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Specificity of relations between adolescents' cognitive emotion regulation strategies and Internalizing and Externalizing psychopathology

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Abstract

Objective: of the study was to examine the extent to which cognitive emotion regulation strategies were 'common determinants' of Internalizing and Externalizing problems and/or 'specific determinants' distinguishing one problem category from the other.

Method: The sample comprised 271 12- to 18-year-old secondary school students. Internalizing and Externalizing problems were measured by the Youth Self-Report (YSR) and Cognitive Emotion Regulation Strategies were measured by the Cognitive Emotion Regulation Questionnaire (CERQ), in a cross-sectional design.

Results: First, adolescents with Internalizing problems, Externalizing problems, comorbid Internalizing and Externalizing problems and a control group were compared on their specific cognitive emotion regulation strategies. Results showed that adolescents with Internalizing problems (both pure and comorbid) scored significantly higher on the cognitive emotion regulation strategies of self-blame and rumination than those with Externalizing (pure) problems or the control group.

Unique relationships between the separate cognitive strategies and Internalizing and Externalizing problems were tested by means of Multiple Regression Analyses. Specific relationships were found between Internalizing problems and self-blame, rumination and positive reappraisal and between Externalizing problems and positive refocusing. No 'common' correlates were found.

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Conclusions: Theoretical models designed for the prediction of Internalizing problems might not simply be used for the prediction of Externalizing problems. Different (cognitive) intervention strategies should be used for adolescents with Internalizing problems and Externalizing problems.

Introduction

Extensive work of Achenbach and colleagues (e.g., Achenbach & Edelbrock, 1987; McConaughy, Stanger, & Achenbach, 1992) has led to the widely accepted distinction between Internalizing and Externalizing expressions of adolescent dysfunctioning. Whereas the category of *Internalizing problems* covers problems that are directed inwards such as disordered mood, withdrawal, anxiety or depression, *Externalizing problems* refer to problems that are directed outwards such as disordered behaviors, aggression, delinquency or hyperactivity (Achenbach & McConaughy, 1997). The experience of some emotional distress and/or some misconduct in adolescence is considered to be normal. It becomes serious when it starts to interfere with the adolescent's functioning for longer periods of time (for example, extreme fears) (Oltmans & Emery, 1995). Although it is impossible to know exact prevalence rates, existing epidemiological investigations indicate that about 15–20% of adolescents in the general population suffer from serious emotional and/or behavioral disturbances (Offer & Schonert-Reichl, 1992). In addition, research has shown some *gender differences* with regard to the way psychological distress manifests itself: boys have been found to be more likely to develop behavioral problems such as acting-out behavior, drug and alcohol abuse, whereas girls are more likely to develop emotional problems such as moodiness, anxiety, depression and suicidal ideation (Offer & Schonert-Reichl, 1992).

Both data from studies at the disorder, syndrome and symptom levels indicate that there is a relatively high degree of comorbidity or co-occurrence of Externalizing and Internalizing symptoms in adolescence (e.g., Anderson, Williams, McGee, & Silva, 1987; McConaughy & Skiba, 1993; Verhulst & Van der Ende, 1993; Garnefski & Diekstra, 1997). Empirical support has even been found for the 'general problem-behavior syndrome theory', referring to the hypothesis that different deviant problem behaviors in adolescents are assumed to be manifestations of one single 'syndrome' of problem behavior in adolescents (Jessor & Jessor, 1977; Donovan & Jessor, 1985; Donovan, Jessor, & Costa, 1988; McGee & Newcomb, 1992). Other studies, however, failed to find empirical support for this theory (Osgood, Johnston, O'Malley, & Bachman, 1988; Elliott, Huizinga, & Menard, 1989; Grube & Morgan, 1990). Clearly, the issue of comorbidity or overlapping constructs represents a central theoretical concern for determining what distinguishes one syndrome from another. Although the issue of overlapping Internalizing and Externalizing symptoms is widely acknowledged, much of the research on risk factors and correlates of psychopathology has been limited to one side or the other of the 'Internalizing–Externalizing' categorization. For example, strong relationships have repeatedly been found between cognitive distortions or negative thinking processes and Internalizing problems (e.g. Garber, Weiss & Shanley, 1993; Joiner & Wagner, 1995; Ronan & Kendall, 1997). Little research, however, has focused on the association between such cognitive constructs and Externalizing problems or on

the comparison of Internalizing and Externalizing problems. In the few studies that did compare cognitive distortions between Internalizing and Externalizing groups, Internalizers were found to report more negative cognitive disturbances or distortions than Externalizers (e.g. Leung & Wong, 1998; Epkins, 2000).

Specific cognitive factors that have been shown to be of particular importance in the context of *Internalizing* psychopathology are the cognitive emotion regulation strategies that adolescents use in the experience of negative life events. The general concept of cognitive emotion regulation, globally, can be understood as the cognitive way of handling the intake of emotionally arousing information (Thompson, 1991). Just like the biological changes of puberty, the cognitive transitions of adolescence have far-reaching implications for the psychological development of youngsters (Steinberg, 1999). Important features of adolescent thinking are, for example, the ability to consider things in hypothetical and abstract terms and to monitor one's own cognitive activity during the process of thinking. Obviously, these cognitive processes are very important in their ability to manage or regulate emotions or feelings, and to keep control over emotions and/or not getting overwhelmed by them, for example, during or after the experience of threatening or stressful events. Although the capability of advanced thinking and regulating emotions through thoughts and cognitions is universal, large individual differences exist in the amount of cognitive activity and in the content of thoughts of adolescents by means of which they regulate their emotions in response to life experiences, events and stressors.

Previous research distinguished between nine conceptually different cognitive emotion regulation strategies that adolescents may use to regulate their emotions in response to life stress, i.e. Self-blame, Other-blame, Rumination, Catastrophizing, Putting into Perspective, Positive Refocusing, Positive Reappraisal, Acceptance and Planning (Garnefski, Kraaij, & Spinhoven, 2001; Garnefski, Kraaij, & Spinhoven, 2002; Garnefski et al., 2002). It has been shown that especially cognitive emotion regulation styles such as *Self-blaming, Catastrophizing* and *Rumination* show strong relationships with *Internalizing problems* (Garnefski et al., 2001, 2002; Garnefski, Legerstee, Kraaij, van den Kommer & Teerds, 2002; Garnefski, Boon, & Kraaij, 2003; Garnefski, Teerds, Kraaij, Legerstee, & van den Kommer, 2003; Kraaij et al., 2003).

Until now, research on cognitive emotion regulation strategies has also been limited to the Internalizing side of psychopathology. Studies examining the relationships between cognitive emotion regulation strategies and Externalizing problems have not been performed until now. Consequently, nothing is known about the extent to which the relationship between cognitive emotion regulation and psychopathology is specific to Internalizing problems or whether it reflects a relationship with Externalizing problems as well. Gaining more insight into which cognitive emotion regulation strategies distinguish Internalizing problems from Externalizing problems is important. It might help to more precisely specify the boundaries of the problem categories as well as to improve the understanding of differential etiology or outcome. The latter might have important implications for preventive and curative interventions.

The present study will focus, cross-sectionally, on the specificity of relations between cognitive emotion regulation strategies and Internalizing and Externalizing problems. More specifically, it will be studied to what extent cognitive emotion regulation strategies are 'common' determinants of Internalizing and Externalizing problems and/or 'specific' determinants distinguishing one problem category from the other. If it is found, that by using certain cognitive strategies,

adolescents may be more or less vulnerable to developing Internalizing problems, Externalizing problems, or both types of problems, important clues for intervention may be suggested.

To study the research questions both categorical and dimensional approaches were used. First, four symptom groups were formed: (1) adolescents with Internalizing problems only; (2) adolescents with Externalizing problems only; (3) adolescents with a combination of Internalizing and Externalizing problems and (4) control group of adolescents with neither Internalizing nor Externalizing problems. The four groups were compared on their reported use of specific cognitive emotion regulation strategies. On the basis of previous research, it was hypothesized that both the Internalizing only and comorbid groups would report more negative cognitive emotion regulation strategies such as Self-blame, Rumination and Catastrophizing than the Externalizing and no-problem groups.

Secondly, unique relationships between the separate cognitive strategies and Internalizing problems were investigated by performing regression analysis, while controlling for gender, age and number of Externalizing symptoms. Comparably, unique relationships between cognitive strategies and Externalizing problems were tested, while controlling for gender, age and number of Internalizing symptoms. It was expected that the cognitive strategies of Self-blame, Rumination, Catastrophizing and (lack of) Positive Reappraisal would be the most important 'predictors' of both Internalizing and Externalizing problems. In addition, it was expected that cognitive emotion regulation strategies would be able to explain more of the variance of Internalizing problems than of Externalizing problems.

Method

Sample

The sample comprised 271 12- to 18-year-old secondary school students (mean age 15 years and 4 months), attending a secondary school in The Netherlands. The sample consisted of 51.1% boys and 48.9% girls, while 28% were receiving higher general secondary education, 49% pre-university education, and 23%, a combination of these two types. The students from 12 complete classes were invited by their school director to participate in the research.

Procedure

To obtain the adolescent sample, a letter was sent to the directors of two secondary schools in The Netherlands. In this letter, these schools were invited to participate in the research project with a proportion of their school population. The schools were told that the project aimed at the participation of a minimum of 250 and a maximum of 300 students in total and that they were free to appoint a proportion of their classes according to their own timetables. The schools agreed to participate with 12 complete classes. Permission for the participation of students was obtained from the parents. Data were gathered by means of a self-report questionnaire filled out by the students in their own classroom, during regular school hours (about 30 min in total), under supervision of their own teacher and a graduate psychology student. The pupils were guaranteed anonymity in relation to their parents, teachers and fellow students. The parents of all students,

except for the parents of one, gave their permission for participation. In total, 271 students filled in the questionnaire.

Instruments

Internalizing and Externalizing problems

Internalizing and Externalizing problems were measured by the Youth Self-Report (YSR) (Achenbach, 1991; Verhulst, van der Ende, & Koot, 1997). The YSR is a self-report questionnaire, designed by T.M. Achenbach, for adolescents between 11 and 18 years old. The questionnaire consists of items concerning activities, social relationships and academic performance as well as items assessing emotional and behavioral problems during the preceding 6 months, and 16 socially desirable items. The response format for the problem items is 0 (not true), 1 (somewhat true) and 2 (very true or often true). The YSR has eight subscales: Withdrawn, Somatic Complaints, Anxious/Depressed, Delinquent Behavior, Aggressive Behavior, Social Problems, Thought Problems and Attention Problems. These subscales are referred to as narrow-band syndromes. Together, the Withdrawn, Somatic Complaints and Anxious/Depressed scales form the Internalizing scale, while the Delinquent and Aggressive Behavior scales together form the Externalizing scale. The Internalizing and Externalizing scales are referred to as broad-band syndromes. In the present study, only the two broad-band Internalizing and Externalizing syndromes were used. The subscale Internalizing consists of 31 items. Scores range from 0 to 62. The subscale Externalizing has 30 items, while scores range from 0 to 60.

The YSR has been shown to have good reliability and validity (Achenbach, 1991; Verhulst et al., 1997). Alpha-reliabilities range from 0.78 to 0.86 for the Internalizing scale and from 0.82 to 0.84 for the Externalizing scale.

Cognitive emotion regulation strategies

Cognitive emotion regulation strategies were measured by the Cognitive Emotion Regulation Questionnaire (CERQ; Garnefski et al., 2002). The CERQ includes nine conceptually distinct scales. These scales all consist of four items referring to what people think after the experience of threatening or stressful life events, ranging from 1 ((almost) never) to 5 ((almost) always). A subscale score can be obtained by adding up 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 following cognitive emotion regulation strategies were measured: *Self-blame,* referring to thoughts of putting the blame of what you have experienced on yourself (example item: 'I feel that I am the one to blame for it'); *Other-blame,* referring to thoughts of putting the blame of what you have experienced on the environment or another person (example item: 'I feel that others are to blame for it'); *Rumination or focus on thought,* referring to thinking about the feelings and thoughts associated with the negative event (example item: 'I often think about how I feel about what I have experienced'); *Catastrophizing,* referring to thoughts of explicitly emphasizing the terror of what you have experienced (example item: 'I often think that what I have experienced is the worst that can happen to a person'); *Putting into Perspective,* referring to thoughts of brushing aside the seriousness of the event/emphasizing the relativity when comparing it to other events (example item: 'I tell myself there are worse things in life'); *Positive Refocusing,* referring to thinking about joyful and pleasant issues instead of thinking about the actual event

(example item: 'I think of something nice instead of what has happened'); *Positive Reappraisal,* referring to thoughts of creating a positive meaning to the event in terms of personal growth (example item: 'I think I can learn something from the situation'); *Acceptance,* referring to thoughts of accepting what you have experienced and resigning yourself to what has happened (example item: 'I think that I have to accept that this has happened') and *Planning,* referring to thinking about what steps to take and how to handle the negative event (example item: 'I think about a plan of what I can do best').

The CERQ has been shown to have good reliability and validity. In most studies, alpha-reliabilities have been found to range between 0.72 and 0.85 (Garnefski et al., 2002).

Classification criteria

A distinction was made between four groups of adolescents: (1) Internalizing-problem group (IP), consisting of adolescents scoring above the 80th percentile of the Internalizing scale and below the 60th percentile in the Externalizing scale; (2) Externalizing-problem group (EP) with adolescents scoring above the 80th percentile of the Externalizing scale and below the 60th percentile of the Internalizing scale; (3) Internalizing-and-Externalizing-problem group (IEP), with adolescents scoring above the 80th percentile of both the Internalizing and the Externalizing scale; and (4) No-problem group (NP), consisting of adolescents who scored below the 60th percentile in both scales. The cut-off score at the 80th percentile was based on research by Achenbach and Rescorla (2001), the authors of the YSR questionnaire, who had shown that—in terms of minimizing false negatives and false positives—the most accurate cutpoints for discriminating between referred and non-referred children for both Internalizing and Externalizing scales were at about the 80th percentile of the normative sample. The 60th percentile cutpoint score was added in the present study to further minimize the number of false classifications. In this manner, cut-off scores were chosen in such a way that both clear criteria for inclusion in the problem groups were set (i.e. >80th percentile) and sufficient statistical power to perform statistical analyses was retained. According to these criteria, adolescents who had scored between the 60th and the 80th percentile on either the Internalizing or Externalizing scale were excluded, to ensure that groups designated as free of problems would not include adolescents who had just marginally failed to fulfill the criteria for inclusion in the problem groups.

Results

Prevalence of Internalizing/Externalizing problems

Table 1 shows that, according to the criteria of the present study, 38.0% ($N = 103$) of the youngsters did not report any 'Internalizing or Externalizing problems (NP)', 8.9% ($N = 24$) reported 'Internalizing problems only (IP)', 8.9% ($N = 24$) reported 'Externalizing problems only' and 4.8% ($N = 13$) reported 'both Internalizing and Externalizing problems (IEP). 107 adolescents (39.5%) were not classified, either because one or both of their problem scores fell somewhere between the 60th and 80th percentile ($N = 102$) or because they had a missing score on one of the outcomes ($N = 5$).

Table 1
Prevalence of Internalizing and Externalizing problems

Internalizing/Externalizing problems	*N*	%
No problems (NP)	103	38.0
Internalizing only (IP)	24	8.9
Externalizing only (EP)	24	8.9
Both Internalizing and Externalizing problems (IEP)	13	7.9

Age and gender differences were tested between the four groups. Significant gender differences were found ($F(3, 157) = 13.16; p = 0.000$). The IP and the IEP groups had the highest percentage of girls (88% and 85%, respectively), while the EP group showed the highest percentage of boys (86%). The NP group was more equally divided, consisting of 55% boys and 45% girls. No significant age differences were found between the four groups ($F(3, 159) = 1.24; p = 0.298$).

Differences between NP, IP, EP, and IEP groups in the reporting of cognitive strategies

MANOVA tested whether an overall multivariate difference existed in the reporting of cognitive emotion regulation strategies between the four groups. The results showed that there was a significant overall difference (Wilks $\lambda = 0.61; F(27, 444.56) = 3.09; p = 0.000$). Univariate *F*-tests showed that the significant differences between the four groups were found in the reporting of the cognitive emotion regulation strategies Self-blame ($F(3160) = 11.39; p = 0.000$), Rumination ($F(3160) = 10.29; p = 0.000$) and Catastrophizing ($F(3160) = 4.91; p = 0.003$). As far as the significant strategies were concerned, post-hoc Tukey tests were performed (testing pairwise significant group differences). The results as well as the means and standard deviations are presented in Table 2.

The results showed that both the IP and the IEP groups had higher scores on Self-blame and Rumination than the EP and the NP group. In addition, the IEP group had higher scores than the EP group, showing that the use of these two cognitive emotion regulation strategies is primarily associated with the reporting of Internalizing problems (with or without comorbid Externalizing problems). As regards Catastrophizing, only significant post-hoc differences were found between the IP and the NP group. Adolescents with Internalizing problems reported significantly more use of the cognitive strategy of Catastrophizing. No significant differences were found between the IP and the EP or IEP groups.

Pearson correlations and multiple regression analyses

To perform Pearson correlation analyses and Multiple Regression Analyses, the total sample ($N = 271$) was included. Pearson (zero-order) correlations among the nine CERQ scales ranged between 0.03 (Self-blame and Positive Refocusing) and 0.49 (Positive reappraisal and Planning) with a mean Pearson correlation coefficient of 0.25. This indicates low to moderate correlations between the subscales (Table 3).

Table 2
Differences between NP, IP, EP and IEP groups in the reporting of cognitive emotion regulation strategies (ANOVA and post-hoc Tukey tests)

		1. NP	2. IP	3. EP	4. IEP	*F*-ratio	Post-hoc Tukey
Self-blame	M	7.49	10.67	7.86	10.49	11.39***	IP > NP***
	(Sd)	(2.54)	(3.29)	(2.87)	(3.64)		IEP > NP**
							IP > EP**
							IEP > EP*
Acceptance	M	10.55	11.79	11.46	10.08	1.25	
	(Sd)	(3.51)	(3.84)	(3.84)	(2.47)		
Rumination	M	9.06	12.67	9.42	12.54	10.29***	IP > NP***
	(Sd)	(3.18)	(3.53)	(3.94)	(3.41)		IEP > NP**
							IP > EP**
							IEP > EP*
Positive Refocusing	M	10.24	10.29	11.39	9.77	0.79	
	(Sd)	(3.59)	(3.78)	(3.98)	(3.19)		
Planning	M	11.70	11.97	11.50	10.77	0.42	
	(Sd)	(3.30)	(3.60)	(3.04)	(2.65)		
Positive Reappraisal	M	11.42	10.74	11.81	9.23	1.92	
	(Sd)	(3.51)	(3.52)	(3.73)	(2.52)		
Putting into Perspective	M	11.26	11.38	11.46	10.23	0.37	
	(Sd)	(3.67)	(3.68)	(3.78)	(2.92)		
Catastrophizing	M	6.19	8.07	7.62	7.38	4.91**	IP > NP***
	(Sd)	(2.48)	(2.51)	(3.09)	(2.33)		
Other-blame	M	6.30	6.67	7.17	7.08	1.24	
	(Sd)	(2.14)	(2.88)	(2.51)	(1.85)		

***$p < .001$;**$p < .01$;*$p < .05$.

Table 3
Pearson (zero-order) correlations among CERQ scales

CERQ subscales	1.	2.	3.	4.	5.	6.	7.	8.
1. Self-blame	—	—	—	—	—	—	—	—
2. Acceptance	0.27***	—	—	—	—	—	—	—
3. Rumination	0.45***	0.24***	—	—	—	—	—	—
4. Positive Refocusing	0.03	0.33***	0.16**	—	—	—	—	—
5. Planning	0.28***	0.46***	0.38***	0.27***	—	—	—	—
6. Positive Reappraisal	0.13*	0.47***	0.13*	0.33***	0.49***	—	—	—
7. Putting into Perspect.	0.19**	0.48***	0.13*	0.35***	0.37***	0.48***	—	—
8. Catastrophizing	0.16**	0.12*	0.31***	0.10	0.16**	0.06	0.05	—
9. Blaming others	0.10	0.09	0.20***	0.04	0.32***	0.20***	0.14*	0.43***

***$p < .001$;**$p < .01$;*$p < .05$.

Table 4
Relationships between cognitive emotion regulation strategies and YSR Internalizing and Externalizing problem-scales: Pearson (zero-order) correlations (r) and standardized regression coefficients (β)

	Internalizing problems		Externalizing problems	
	Pearson (zero-order) correlation r	Standardized regression coefficient β	Pearson (zero-order) correlation r	Standardized regression coefficient β
Gender	0.39***	0.33***	−0.24***	−0.38***
Age	ns	ns	ns	ns
Internalizing problems	—	—	0.20**	0.38***
Externalizing problems	0.20**	0.25***	—	—
Cognitive emotion regulation strategies				
Self-blame	0.41***	0.22***	ns	ns
Acceptance	ns	ns	ns	ns
Rumination	0.45***	0.27***	ns	ns
Positive Refocusing	ns	ns	0.12*	0.17**
Planning	ns	ns	ns	ns
Positive Reappraisal	−0.24***	−0.30***	ns	ns
Putting into Perspective	Ns	ns	ns	ns
Catastrophizing	0.20**	ns	0.13*	ns
Other-blame	ns	ns	0.14*	ns
Total explained variance (R^2)		48.4%		21.7%

***$p<.001$;**$p<.01$;*$p<.05$.

To study zero-order relationships between CERQ scales, gender, age and Internalizing and Externalizing problems, Pearson correlations were calculated (Table 4). Significant correlations were found between Internalizing problems on the one hand and gender, Self-blame, Rumination, Positive Reappraisal and Catastrophizing on the other. Externalizing problems had significant correlations with gender, Positive Refocusing, Catastrophizing and Other-blame. Internalizing and Externalizing problems had a moderate (significant) correlation of 0.20 ($p<0.01$). Pearson correlations between age and Internalizing and Externalizing numerical scores were non-significant ($r = 0.03$ and 0.07, respectively).

To study the unique relationships between the separate cognitive strategies and Internalizing and Externalizing problems, Multiple Regression Analyses were performed. The numerical Internalizing and Externalizing problem scores were included as dependent variables and the nine cognitive coping strategies as independent variables. The analyses were controlled for gender, age and Externalizing and Internalizing problems. No problems of multi-collinearity were encountered. Final equation results are presented in Table 4, represented by the standardized (partial) regression coefficients (β).

Both regression models were significant. As regards the prediction of Internalizing problems: after controlling for gender, age and Externalizing problems, the percentage of variance explained by cognitive emotion regulation strategies was 48.4%. Significant unique 'predictors' of

Internalizing problems were Rumination, Self-blame and Positive Reappraisal. As regards the directions of the relationships: the cognitive coping strategies Self-blame and Rumination were positively related to the reporting of Internalizing problems. This implies that a more frequent use of these strategies was related to the reporting of more problems. In addition, frequent use of Positive Reappraisal appeared to be related to the reporting of less Internalizing symptomatology.

As regards the prediction of Externalizing problems, after controlling for gender, age and Internalizing problems, explained variance was 21.7%. The only remaining significant unique 'predictor' of Externalizing problems was Positive Refocusing (positive relationship, i.e. the more Positive Refocusing, the more Externalizing problems).

Both for Internalizing and Externalizing problems, strong significant effects were found for gender: the reporting of Internalizing problems was more strongly related to being a girl, while the reporting of Externalizing problems was associated with being a boy. No significant relationships were found with age.

Discussion

The findings of the present study support the conclusion that Internalizing and Externalizing problems in adolescents refer to two distinct categories of adolescent dysfunctioning. Firstly, differences were found between adolescents with Internalizing problems and adolescents with Externalizing problems in their reported use of specific cognitive emotion regulation strategies. Adolescents classified as having Internalizing problems (both pure and comorbid groups) scored higher on the cognitive emotion regulation strategies of Self-blame and Rumination than those with (pure) Externalizing problems, confirming the hypotheses concerning these cognitive emotion regulation strategies. No differences were found between Internalizers and Externalizers with regard to the cognitive emotion regulation strategy of Catastrophizing. Not one specific cognitive emotion regulation strategy was found, on which Externalizers scored significantly higher than Internalizers did.

Secondly, cognitive emotion regulation strategies were able to explain more of the variance of Internalizing problems than of Externalizing problems. This suggests that cognitive emotion regulation strategies are much stronger related to Internalizing problems than to Externalizing problems. This confirms the findings of earlier studies showing that Internalizers appeared to report more negative cognitive disturbances or distortions than Externalizers (e.g. Leung & Wong, 1998; Epkins, 2000).

Thirdly, the specific cognitive emotion regulation strategies that were found to be uniquely related to Internalizing problems were not the same as those found to be uniquely related to Externalizing problems. In other words: no common correlates of psychopathology were identified. The results showed that, after correcting for the influence of gender, age, the other strategies and Externalizing problems, unique and independent 'predictors' of Internalizing problems were: Self-blame, Rumination and lack of Positive Reappraisal, confirming one of our hypotheses. The only unique and independent 'predictor' of Externalizing problems (after correcting for gender, the other strategies and Internalizing problems), however, was Positive Refocusing. In contrast to the other cognitive emotion regulation strategies, Positive Refocusing (i.e. focusing on other, joyful issues instead of what has happened) refers to an event-avoiding

strategy. These results suggest, that whereas Internalizing problems might be more specifically related to event-related cognitive strategies, Externalizing problems might be more specifically related to event-avoiding strategies.

A limitation of the design was that the detection of Internalizing and Externalizing symptoms as well as the assessment of cognitive emotion regulation strategies was made on the basis of self-reported evaluations, which may have caused some 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 is important for future studies to address research questions concerning relationships between cognitive emotion regulation and emotional and behavioral problems by using both self-reported and other forms of data collection, such as interviews, expert judgements or experimental research. It should also be noted that the present sample has been a general population sample, and that relations among variables may be different in adolescents with more severe disorders. In future, comparison studies should be performed focusing on questions such as whether relationships and conclusions of the present study are also valid in adolescents from (specific) clinical populations. Further, the present study used cut-off scores based on research by Achenbach and Rescorla (2001) to classify adolescents into Internalizing and Externalizing-problem groups. Although it can never be completely excluded that some adolescents may have been misclassified, we assume that the choice for these specific cutpoints has minimized the number of misclassifications.

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. Theoretically, it is just as likely that a certain cognitive coping emotion regulation strategy leads to Internalizing or Externalizing problems, as the other way around. Circular causal mechanisms may also be at work, which would make both assumptions true at the same time. Prospective elements should be included in future studies to help us untangle the dynamic aspects of the relationships among these variables.

Still, whatever the directions of influence may be, it is clearly shown that the use of certain cognitive emotion regulation strategies and serious Internalizing disturbances in adolescents are *related* issues. Especially the relationships between the use of the cognitive emotion regulation strategies of Self-blame and Rumination and the reporting of Internalizing symptoms suggest that the existence of such symptoms might form an indication for the existence of—possibly long-established—'unadaptive' strategies of cognitive emotion regulation. This implicates that cognitive emotion regulation strategies should play an important role in theoretical models and that it may be worthwhile to aim intervention efforts at one's cognitive emotion regulation strategies. The assumption that a patient's symptoms will be relieved if irrational beliefs or dysfunctional thoughts are changed is not a new one. In fact, one of the basic premises of cognitive therapies is that things are inappropriately viewed by people suffering from depressive symptoms and that therapy should bring about changes in those views (see for example, Beck, 1976; Ellis, 1962). What is new is that our approach and results might give some clues for a more targeted tailoring of treatment. In case of Internalizing problems, it might be suggested that 'unadaptive' strategies such as self-blaming and Rumination should be challenged, while more 'adaptive' strategies such as Positive Reappraisal, should be applied, at the same time.

The results also suggest that theoretical models designed for the prediction of Internalizing problems might not simply be used for the prediction of Externalizing problems. In addition,

adolescents with pure Externalizing problems might require different (cognitive) intervention approaches than adolescents with pure Internalizing or mixed problems. The present study found indications for the existence of a relationship between Externalizing problems and the reporting of the event-avoiding cognitive strategies. The exploratory character of these results makes replication, thorough testing and further research (e.g. inclusion of other factors) necessary. However, if these results can be confirmed, they also might carry important implications for the focus and content of intervention of Externalizing problems in adolescents.

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