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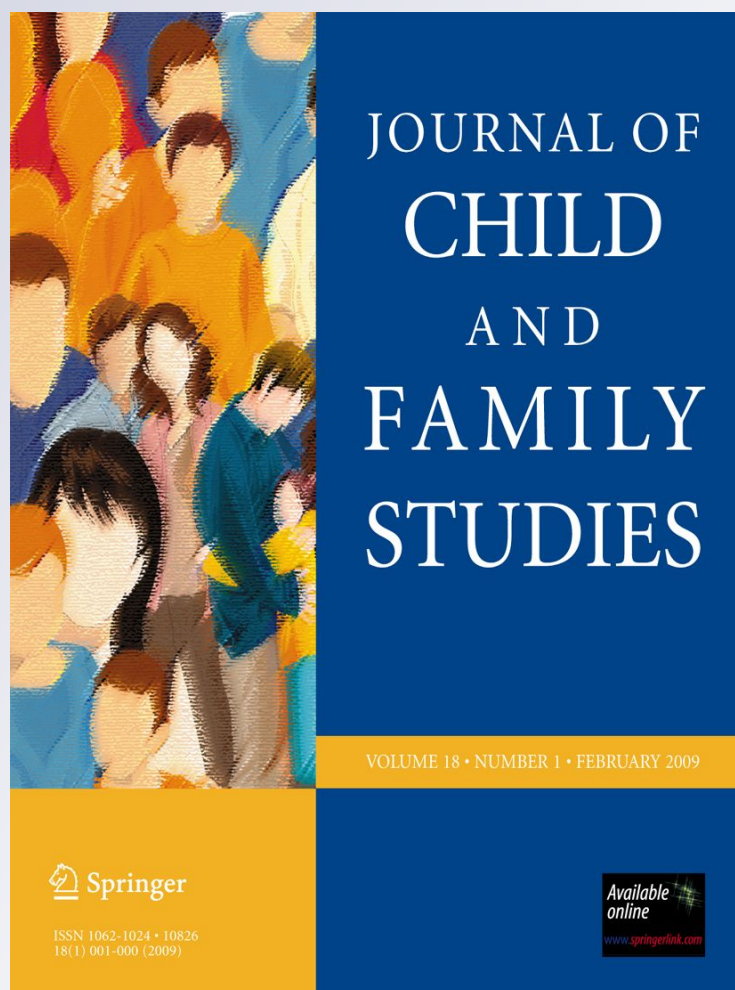
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Relationships Between Parent and Child Emotion Regulation Strategy Use: A Brief Report

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Abstract We examined the direct relationships between parent and child emotion regulation (ER) strategy use during the transitional and understudied developmental periods of middle childhood through to adolescence. Three hundred and seventy-nine participants aged between 9 and 19 years, completed the Emotion Regulation Questionnaire for Children and Adolescents. In addition, 358 of their mothers and 207 of their fathers completed the Emotion Regulation Questionnaire. Providing partial support for the hypothesis, maternal use of the ER Expressive Suppression strategy was significantly predictive of their child's use of Suppression. However, paternal ER strategy use was unrelated to their child's ER strategy use. Child age did not moderate the relationships investigated. These findings suggest that children's ER during middle childhood and adolescence is more closely related to the ER of their mother than their father. It is proposed that this may be accounted for by emotion socialization processes.

Keywords Emotion regulation · Adolescents · Children · Parents · Emotion socialization

Introduction

Emotion regulation (ER) involves the monitoring, maintenance and modulation of emotional responses by both intrinsic and extrinsic means (Thompson 1994). Normative to clinical consequences associated with individual differences in ER have sparked much interest in research aiming to examine the developmental predictors of child ER functioning, including the role of parents (see Bariola et al. in press; Morris et al. 2007, for reviews). Of interest, it has been speculated that children may imitate or internalize their parents' ways of regulating emotions via means of modelling or social referencing (Bridges et al. 2004; Denham 1998; Morris et al. 2007; Thompson 1994).

Specifically, it has been proposed that the frequency and valence parents' emotional expression may be the means through which parents' ER strategies are transmitted to their children (Morris et al. 2007). Children's exposure to a varying range of emotions and observation of their parents' verbal and behavioral responses to emotional stimuli may in turn enable children to utilize similar ER strategies when confronted with their own emotionally salient situations (Morris et al. 2007).

Preliminary support for the modeling hypothesis has come from studies of depressed mothers who are thought to create a negative affective environment whereby their child learns maladaptive ER. For example, Silk et al. (2006) found that 4- to 7-year-old children of depressed mothers were more likely to wait passively when distressed rather than actively engaging in distraction, compared to children of non-depressed mothers. Assessing mothers' ER strategies specifically, Garber et al. (1991) reported that depressed mothers and their 8- to 13-year-old children reported using significantly fewer and poorer quality ER strategies in response to sadness-eliciting vignettes as

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compared to non-depressed mothers and their children. These are the only two known studies that have examined associations between parent and child ER.

Although these studies provide some information about the potential transmission of ER strategies from parents to their young children, this process may vary across childhood developmental periods. During adolescence there exists an increasing orientation toward autonomy (Spear 2000) and less time is spent with family (Larson et al. 1996). Within the context of this changing social environment, it has been proposed that extra-familial agents (e.g., peers, teachers, media) may be more influential during this developmental period than are parents (Eisenberg and Morris 2002; Klimes-Dougan et al. 2007; Morris et al. 2007). However, no studies have examined relationships between parent and adolescent ER.

Another limitation of existing research is the relative neglect of the paternal role (Lamb 2004). The few studies that have examined maternal and paternal roles separately have found that mothers and fathers each contribute uniquely to child ER development (Cassano et al. 2007). Moreover, it has been reported that mothers are more likely to be involved in their children's development of the ability to cope and manage their emotional expression than are fathers (Fivush et al. 2000; McDowell et al. 2002).

Existing research has also been criticized regarding a lack of consensus in conceptualizing and measuring ER (Bridges et al. 2004; Cole et al. 2004). For example, ER has been conceptualized as effortful control (Eisenberg et al. 2005), as the venting of frustration (Calkins and Johnson 1998) and as the *amount* of regulation (Eisenberg et al. 2001, 2003; Greenberg et al. 1999). This final approach is based on the premise that more regulation is adaptive and healthy, whilst less regulation is maladaptive. However, it has been argued that more regulation may not be desirable as it may implicate emotional, behavioral or social inhibition and other maladaptive strategies (Bridges et al. 2004; Gross 1998).

Overcoming some of these limitations, Gross (1998) proposed a process-oriented model of ER. The model asserts that evaluations of emotional stimuli lead to response tendencies of a behavioral or physiological nature which ultimately contribute to either adaptive or maladaptive emotional responses to the situation or stimulus. It is proposed that the consequences of the response tendencies are dependent on their locality in the timeline of sequential events in the emotion production process (Gross 1998, 2001). Gross and John (2003) operationalized two ER strategies within this model: Expressive Suppression and Cognitive Reappraisal. Suppression involves the inhibition of affective expression and Reappraisal involves

redefining an emotionally eliciting situation so that its affective impact is modified (Gross 1998).

In relation to their functional nature, empirical research has provided evidence to implicate Reappraisal as an adaptive strategy and Suppression as a maladaptive strategy (John and Gross 2004). For example, in an adult sample Suppressors expressed less positive emotion, had low self-esteem, low life satisfaction and greater depressive symptomatology than Reappraisers (Gross and John 2003). Among childhood and adolescent samples, more Suppression use and less Reappraisal use has been linked with anxiety disorders and depressive symptomatology (Betts et al. 2009; Hughes et al. 2010).

We examined whether mothers' and fathers' ER strategy use is related to child ER strategy use. By examining middle childhood through to adolescence, we expanded previous research which has focused on infancy and early childhood. Additionally, by conceptualizing and measuring ER within Gross' (1998) process-oriented model and including both mothers' and fathers' ER, we improved upon the scientific and methodological rigor of previous research.

We hypothesized that parents' reported use of Reappraisal and Suppression would be positively related to their children's reported use of Reappraisal and Suppression, respectively. We also hypothesized that mothers' ER strategy use would account for greater variance in their children's ER strategy use than fathers' strategy use and that relationships would be stronger for younger compared to older children.

Method

Participants and Procedure

The sample was drawn from the fifth wave of a larger longitudinal study of children (see Gullone et al. 2010; $n = 846$) recruited from 19 primary schools and 9 secondary schools in metropolitan Melbourne, Australia. The study was approved by the institutional ethics committee. Parents were recruited via their children at the fifth wave of the larger longitudinal study. Questionnaires were posted to parents who indicated they would be interested in completing questionnaires at the time of providing consent for their children to participate. A total of 363 of the children's mothers and 214 of their fathers participated. Following data cleaning, the sample comprised 379 children (age range 9.92–19.52 years; $M = 14.81$, $SD = 2.40$; 43.54% male), 358 mothers ($M = 44.99$ years, $SD = 5.62$) and 207 fathers ($M = 48.00$ years, $SD = 6.70$).

Measures

Parent Emotion Regulation

The Emotion Regulation Questionnaire (ERQ; Gross and John 2003) is a 10 item measure of propensity to use Cognitive Reappraisal (6 items, e.g., “When I want to feel less negative emotions, I change the way I’m thinking about the situation”) and Expressive Suppression (4 items; “I keep my emotions to myself”). Participants respond on a 5-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*). The original response format was a 7-point Likert scale, however, this was reduced in the current study to match the response format of the child measure. The ERQ has sound reliability and validity (Gross and John 2003). In the current study, internal consistency coefficients were Reappraisal $\alpha = .83$, .83, Suppression $\alpha = .78$, .66 for mothers and fathers, respectively.

Child Emotion Regulation

A modified version of the ERQ (ERQ for Children and Adolescents—ERQ-CA) was used to optimize completion by children and adolescents. Modifications included reducing the response scale to five points and simplifying the wording. Items include, for example, “I control my feelings about things by changing the way I think about them” (Reappraisal) and “When I’m feeling happy, I am careful not to show it” (Suppression). Sound psychometric properties of the ERQ-CA have been established including adequate reliability and validity (Betts et al. 2009; Gullone 2010; Jaffe et al. 2010). In the current study, internal consistency coefficients were .85 and .77 for Reappraisal and Suppression, respectively.

Results

Data Screening

Cases were omitted if they did not complete the ERQ-CA or the parent lived with their child less than half of the time

($n = 8$). Two outliers were recoded to one point higher (or lower) than the next most extreme score (Tabachnick and Fidell 2007). No multivariate outliers were identified and minimal skewness of variables was observed.

Preliminary Analyses

Means and standard deviations of the study variables are presented in Table 1. There were no significant differences between boys and girls for Suppression, $t(375) = 1.85$, $p = .07$, or Reappraisal, $t(377) = -.82$, $p = .41$. Mothers and fathers did not differ significantly for Reappraisal, $t(186) = 1.60$, $p = .11$, however, mothers reported less use of Suppression than fathers, $t(185) = -6.77$, $p < .001$, $d = -.50$.

Table 2 displays the Pearson’s correlations between child age and ER strategies. Child age was significantly negatively correlated with child Reappraisal, but was not significantly correlated with child Suppression. There was a significant positive correlation between child Suppression and maternal Suppression. Using Fisher’s r to z transformation, the mother–child Suppression correlation coefficient was found to be significantly larger than the father–child Suppression correlation coefficient ($z = 2.31$, $p < .05$). There was also a significant positive correlation between maternal Reappraisal and paternal Reappraisal. All relationships were small in magnitude (Cohen 1988).

Hierarchical Regression Analyses

Two hierarchical regression analyses with pair-wise exclusion were conducted predicting child Reappraisal and Suppression from parent Reappraisal and Suppression, controlling for child age and sex. Child age was also entered as a moderator. Entry order of parental variables was hierarchical in accordance with the hypothesis that maternal ER would account for greater variance in child ER than paternal ER. The moderating effects of child sex were also examined in separate analyses. However, it was found to be non-significant so the details of these analyses have not been reported. Please contact the corresponding author for information regarding these analyses.

Table 1 Means and standard deviations for parent and child emotion regulation strategy use

Measure	Children overall <i>M</i> (SD)	Male children <i>M</i> (SD)	Female children <i>M</i> (SD)	Mothers <i>M</i> (SD)	Fathers <i>M</i> (SD)
Emotion regulation					
Reappraisal	21.39 (3.88) <i>n</i> = 379	21.20 (4.00) <i>n</i> = 165	21.53 (3.79) <i>n</i> = 214	21.13 (3.62) <i>n</i> = 356	20.79 (3.69) <i>n</i> = 207
Suppression	10.37 (3.03) <i>n</i> = 377	10.70 (2.84) <i>n</i> = 165	10.12 (3.16) <i>n</i> = 212	10.30 (2.90) <i>n</i> = 358	12.07 (2.45) <i>n</i> = 205

Table 2 Pearson's correlations between parent and child emotion regulation strategy use

Variable	1	2	3	4	5	6
<i>Child</i>						
1. Age	–					
2. Reappraisal	–.09*	–				
3. Suppression	.05	–.17**	–			
<i>Mother</i>						
4. Reappraisal	–.08	.02	.03	–		
5. Suppression	.03	–.03	.21**	.06	–	
<i>Father</i>						
6. Reappraisal	–.09	.02	.01	.21**	–.02	–
7. Suppression	–.07	–.02	.01	–.12	.01	.11

N (children) = 377–379; *N* (mothers) = 356–358; *N* (fathers) = 205–207 (with pair-wise deletion)

* $p < .05$; ** $p < .01$ (one tailed)

As shown in Table 3, maternal Suppression was the only parental variable which significantly predicted child ER, whereby greater maternal Suppression predicted greater child Suppression. However, once paternal variables were entered, the regression model was not significant.

Discussion

As predicted, parents' reported use of Suppression was associated with their children's reported use of Suppression, but only for mothers. However, relationships were small in magnitude and neither mothers' nor fathers' reported use of Reappraisal was significantly associated with their children's reported use of Reappraisal. Relationships were not moderated by child age.

To the authors' knowledge, this is the first study that has directly examined associations between parent and adolescent ER strategies. The finding that maternal Suppression was significantly associated with child Suppression is, however, consistent with related research examining ER in children of depressed mothers (Garber et al. 1991; Silk et al. 2006). Although mothers may confer a genetic predisposition for ER strategy use, it is also likely that children may internalize or model their parents' style of regulating their emotions (Bridges et al. 2004; Denham 1998; Morris et al. 2007; Thompson 1994). For example, Suppression use leads to a discrepancy between the emotion-eliciting event and the emotional response. This discrepancy may be readily observable for a child, thus increasing the likelihood of modelling this strategy. In contrast, Reappraisal use is a cognitive, and therefore internal, strategy and may be less likely to be modelled (Gross and John 2003).

As hypothesized, mothers' ER strategy use appeared to be more strongly related to their child's ER strategy use than fathers'. This finding is congruent with McDowell et al.'s (2002) finding that mothers' indices of emotionality had stronger relationships with child ER than did the paternal variables. It is also consistent with the proposal that mothers may be more pro-actively involved in the emotion socialization of their children during this later developmental period (Garside and Klimes-Dougan 2002; Klimes-Dougan et al. 2007), particularly their ability to regulate emotional expression (Fivush et al. 2000). By comparison, paternal emotional socialization of their children may be more salient during infancy and early childhood due to more frequent father-child interactions during physical play (Lamb 2004; Parke 1994).

Aside from maternal and child Suppression use, parent and child ER strategy use appeared unrelated. This finding may be partly due to the changing social context that predominates middle childhood to adolescence. An increasing orientation toward autonomy (Spear 2000) and less time spent with family (Larson et al. 1996) may result in extra-familial agents (e.g., peers, teachers, media) being more influential during this developmental period (Eisenberg and Morris 2002; Klimes-Dougan et al. 2007; Morris et al. 2007). Contrary to this, however, child age was not found to be a significant moderator of the proposed relationships. It is possible that changes in the strength of the associations between parental and child ER pertaining to age, may occur earlier than age nine.

Limitations

Reappraisal and Suppression are just two of the many possible strategies we may use to regulate our emotions (John and Gross 2004). The examination of other ER strategies will contribute to a more comprehensive understanding of the relationships that exist between parent and child ER.

Due to the self-report method of data collection, it must be noted that reporter bias may have influenced the results. Additionally, due to the cross-sectional methodology of the current study, causality cannot be established and the role of child effects cannot be ruled out. Longitudinal research would allow greater scope for such inferences about the direction of effects to be made and would also permit examination of changes across developmental periods.

Conclusions

Overall, the current findings provide some support for associations between parent and child ER, although these

Table 3 Summary of hierarchical regression analyses for child emotion regulation as regressed on parent emotion regulation

Variable	Child reappraisal			Child suppression		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Step 1						
Child age	-.15	.12	-.10	.07	.09	.05
Child sex	-.38	.58	-.05	.60	.45	.10
	$F(2,182) = .99, p > .05$			$F(2,182) = 1.08, p > .05$		
	$R^2 = .01$			$R^2 = .01$		
	Adjusted $R^2 = .00$			Adjusted $R^2 = .00$		
Step 2						
Mother reappraisal	.02	.08	.02	.01	.06	.01
Mother suppression	-.04	.10	-.03	.22	.08	.21**
	$F(4,180) = .56, p > .05$			$F(4,180) = 2.76, p < .05$		
	$R^2 = .01$			$R^2 = .06$		
	Adjusted $R^2 = -.01$			Adjusted $R^2 = .04$		
Step 3						
Father reappraisal	.00	.08	.00	.02	.06	.02
Father suppression	-.06	.12	-.04	.03	.09	.03
	$F(6,178) = .40, p > .05$			$F(6,178) = 1.86, p > .05$		
	$R^2 = .01$			$R^2 = .06$		
	Adjusted $R^2 = -.02$			Adjusted $R^2 = .03$		
Step 4						
Mother reappraisal \times child age	.00	.03	.00	-.03	.03	-.07
Mother suppression \times child age	.02	.04	.04	.00	.03	-.01
Father reappraisal \times child age	-.01	.03	-.02	.01	.03	.04
Father suppression \times child age	-.08	.05	-.12	.06	.04	.11
	$F(10,174) = .52, p > .05$			$F(10,174) = 1.52, p > .05$		
	$R^2 = .03$			$R^2 = .08$		
	Adjusted $R^2 = -.03$			Adjusted $R^2 = .03$		

** $p < .01$

relationships appear to be specific to mother–child dyads and to more readily observable strategies such as Suppression. The current study extended previous research in this area by adopting a comprehensive model that conceptualizes ER in a multi-faceted way, by examining a previously understudied age group, and by including both mothers and fathers. The findings contribute to a greater understanding of the development of ER which has important implications for emotional and psychosocial functioning.

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