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Cognitive Reappraisal and Depression in Children with a Parent History of Depression

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Abstract Although decades of research have documented that children whose parents have a history of Major Depressive Disorder (MDD) are at a higher risk of developing depression themselves, not all of these children go on to develop depression themselves, thus highlighting the need to understand potential moderators of risk. The current study examined whether child emotion regulation, specifically, the use of cognitive reappraisal and suppression, moderated the link between parent and child depression. We recruited 458 parents and their children between the ages of 7–11 from the community. The majority of children were Caucasian (74.2%) and approximately half were girls (46.1%). Among children with a parent history of MDD, those who reported using cognitive reappraisal more frequently were less likely to have a history of depressive diagnoses themselves and had higher current levels of positive affect. Although children's use of suppression was not associated with their levels of depressive symptoms among children with a parent history of MDD, higher levels of suppression were related to higher levels of depressive symptoms among children with no parent history of MDD. These findings suggest that, among children with a history of parent depression, children's use of cognitive reappraisal may influence their own risk for developing depression and highlights the potential utility of early interventions that focus on improving the use of emotion regulation strategies like cognitive reappraisal among children of depressed parents.

Keywords Emotion regulation · Cognitive reappraisal · Suppression · Parental depression · Child depression

Depression is the leading cause of disability globally, affecting approximately 350 million individuals worldwide (WHO 2016). Previous research suggests that depression that onsets during childhood is characterized by especially deleterious social and academic sequelae, as well as greater risk of comorbidity with other psychiatric and medical disorders, chronicity, recurrence, and suicidality (Fleisher and Katz 2001; Luby 2009; Naicker et al. 2013; Zisook et al. 2007). A family history of depression is one of the most robust predictors of children's risk for developing depression (Goodman 2007; Goodman et al. 2011; Sullivan et al. 2000). This said, the majority of these at-risk children do not develop depression themselves, highlighting the need for research seeking to identify specific factors that may heighten or reduce risk for depression in these children. Focusing on risk factors that could be modified though intervention is critical for improving targeted prevention efforts.

One promising factor is child emotion regulation (ER), conceptualized as the ability to modulate emotional experience, which gradually develops in the first years of life, as children shift from relying exclusively on caregivers for affect regulation to self-regulating their emotions (Gross 1998; Kopp and Neufeld 2003). Maternal depression is frequently associated with a highly stressful family context, increasing child's levels of interpersonal stress and exposure to stressful events, thereby dramatically increasing child's risk for developing depression (Hammen and Brennan 2002; Hammen et al. 2004). These findings highlight the role of child ER, which promotes adaptation to the family/social environment, as a critical moderator of the relation between parent and child depression (Gross 1998; Kopp and Neufeld 2003; Thompson 2008) and

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suggest that the use of adaptive ER strategies could influence children's risk for the intergenerational transmission of depression.

Supporting this hypothesis, there is evidence that the use of coping strategies, such as positive thinking, acceptance, and distraction, is associated with fewer symptoms of depression among adolescents of currently depressed parents (Langrock et al. 2002). Importantly, previous research suggests that child ER, specifically the child's ability to generate more positive affect during a laboratory paradigm designed to induce negative emotions, could reduce risk for internalizing problems among children with a parent history of depression (Silk et al. 2006). Moreover, parent history of depression has been linked to decreased use of active behavioral ER strategies (actively trying to change a distressing situation) and decreased positive mood in preschoolers, while the use of passive behavioral ER strategies (sitting quietly without engaging in any activity) has been associated with behavioral inhibition among children of parents with a history of depression (Feng et al. 2007). These findings underscore the potential role of child ER in intergenerational transmission of depression and offer a modifiable target for early interventions.

Cognitive reappraisal (CR) and suppression are among the most researched strategies to regulate emotions. CR is an antecedent-focused strategy that involves cognitive reframing of emotional stimuli in a way that modifies the emotional experience, whereas suppression is a response-focused strategy that involves decreasing overt expressions of an already generated emotional experience (Gross and John 2003; Lazarus and Alfert 1964). CR is thought to be among the most adaptive forms of ER, and an extensive body of research has suggested that more frequent use of CR is associated with better overall well-being and interpersonal functioning, greater mood repair capacity, and lower depressive symptoms (Garnefski et al. 2004; Gross and John 2003). Among early and late adolescents, the use of positive reappraisal, which is the use of CR to increase positive emotions, was associated with lower current levels of depressive symptoms (Garnefski and Kraaij 2006). Habitual suppression, on the other hand, has been associated with negative outcomes, including higher levels of rumination and depressive symptoms, less positive affect, and maladaptive pattern of neural and physiological responding (Gross and John 2003; Gross and Levenson 1993; Kühn et al. 2011; Ohira et al. 2006).

Surprisingly, the use of CR and suppression in children with a parent history of depression and their associations with children's' own depression and affect have not been explored. Specifically, it remains unclear whether the habitual use of CR and suppression moderates the relation between parent and child depression, such that CR may lower risk for the intergenerational transmission of depression, whereas more frequent use of suppression may increase the likelihood of child depression among children with a parent history of depression. That is, are children of depressed parents who use CR more often less likely to develop depression themselves? And, are children who use suppression more often more likely to develop depression themselves? In the current project, we hypothesized that children's use of CR would moderate the association between parent history of MDD and children's own depression such that, among children with a parent history of MDD, those who report more, compared to less, frequent use of CR would be less likely to have a history of a depressive disorder themselves and would report lower current levels of depressive symptoms and greater positive affect. We also predicted that, among children with a parent history of depression, the higher use of suppression would be linked to greater likelihood of past depressive disorders, higher current levels of depressive symptoms, and lower levels of positive affect.

Method

Participants

Participants were 458 parents and their child recruited from the community. To qualify for the study, the child had to be between the ages of 7–11 years old, live with the participating parent at least half the time, and not have a learning disability or developmental disorder based on parent report. Parents were required to either have a history of at least one episode of MDD during their child's lifetime (n = 201), or have no lifetime history of MDD (n = 257). If more than one child from the same family participated in the study, one of the siblings was randomly selected to remain in our analyses. The average age of participating parents was 37.35 years (SD = 7.31) and the majority were women (89.5%) and Caucasian (82.9%). The average age of children was 8.98 years (SD = 1.37), the majority were Caucasian (73.9%), and 46.1% were girls. The median annual family income was between $35,001 and 40,000. The demographic and clinical characteristics for the participants are presented in Table 1.

Measures

The Structural Clinical Interview for DSM-IV-TR Axis I Disorders (SCID-I; First et al. 2002) and the Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime Version (K-SADS-PL; Kaufman et al. 1997) were used to assess parent and child histories of DSM-IV Axis I diagnoses. The SCID-I and K-SADS-PL were administered by two separate trained interviewers. A total of 201 (43.9%) of parents met criteria for MDD during their child's life, 185 (92.0%) of whom were women. Twenty-one (4.6%) of the parents met criteria for

Table 1 Descriptive statistics for parents and children

	No Parent MDD History (n = 257)	History of Parent MDD in Child's life (n = 201)	$F/\chi 2$
Parent Age (*M, SD*)	38.28 (7.26)	36.16 (7.22)	9.64**
Parent Ethnicity (% Caucasian)	82.9	83.6	0.04
Parent Sex (% female)	87.5	92.0	2.43
Child Age	8.86 (1.33)	9.08 (1.40)	2.94
Child Ethnicity (% Caucasian)	73.9	74.6	0.03
Child Sex (% female)	47.9	43.8	1.35
ERQ-CA CR (*M, SD*)	20.25 (4.31)	20.82 (4.65)	2.50
ERQ-CA Suppression (*M, SD*)	10.91(2.65)	10.79 (2.87)	0.240
Child CDI (*M, SD*)	6.17 (6.03)	6.79 (5.17)	5.62*
AFARS- PA (*M, SD*)	22.75 (4.49)	23.67 (4.37)	5.89*
Child Depression Diagnosis (% with lifetime major or minor depression)	6.6	10.9	2.72
Annual Family Income	45,001–50,000	25,001–30,000	33.12**

MDD Major Depressive Disorder, *ERQ-CA CR* Cognitive Reappraisal scale of the Emotion Regulation Questionnaire, *ERQ-CA Suppression* Suppression scale of the Emotion Regulation Questionnaire, *CDI* Children's Depression Inventory, *AFARS- PA* Positive Affect scale of the Affect and Arousal Scale for Children

*$p < 0.05$. **$p < 0.01$

current MDD. The base rate of MDD in our sample is higher than that typically found in epidemiological studies (Kessler et al. 2003), which is likely due at least in part, to the lower SES in our sample (Kessler et al. 1997). Specifically, approximately 77% of our sample did not graduate from college, nearly 40% of our participants were single parents, and the median annual family income was between $35,001 and 40,000. In addition, the language of our advertising may have disproportionately attracted families with a history of depression. In terms of children's history of depressive disorders, a total of 39 (8.5%) children had a lifetime history of major or minor depressive disorder (n = 24 for MDD; n = 15 for minor depression[1]) and 3 (0.7%) were diagnosed with current MDD. To assess inter-rater reliability, a subset of 20 SCID-I and 20 K-SADS-PL interviews from this project were coded by a second rater and kappa coefficients for lifetime depressive diagnoses in parents and children were good (κs = 0.89 and 1.00, respectively).

Children's current depressive symptom levels were assessed using the Children's Depression Inventory (CDI; Kovacs 1985). The CDI is one of the most widely used measures of current depressive symptoms in children and adolescence that consistently demonstrated good reliability and validity in community samples (Smucker et al. 1986). In our sample, the CDI demonstrated good internal consistency (α = 0.83).

Childrens' current levels of positive affect were assessed using the Positive Affect subscale of the Affect and Arousal Scale (AFARS-PA; Chorpita et al. 2000). The AFARS is a 27-item self-report measure of positive and negative affect and physiological hyper-arousal that showed high internal consistently and validity in previous research (Chorpita et al. 2000; Daleiden, Chorpita, & Lu, 2000). In our sample, the AFARS-PA demonstrated good internal consistency (α = 0.70).

The Emotion Regulation Questionnaire for Children and Adolescents (ERQ-CA) was used to assess children's habitual or typical use of CR and suppression, with no specific timeframe. The ERQ-CA is a version of the ERQ (Gross and John 2003) that was adapted and evaluated for use with children and adolescents (Gullone and Taffe 2012). ERQ-CA is a 10-item measure of individual's ER strategies that contains CR and expressive suppression subscales. Items from the CR subscale include, "I control my feelings about things by changing the way I think about them" and "When I am worried about something, I make myself think about it in a way that helps me feel better." Items from the suppression subscale include, "I control my feelings by not showing them" and "I keep my feelings to myself." Children were asked to rate each item on a 5-point Likert-type scale from *Strongly Disagree* to *Strongly Agree*. In this sample, the internal consistency (α) of the CR and suppression subscales were 0.77 and 0.58, respectively.

Parents' current depressive symptoms were assessed using the Beck Depression Inventory-II (BDI-II; Beck et al. 1996).

[1] Consistent with research diagnostic criteria (Spitzer et al. 1978), as well as past research studies of youth focusing on diagnoses of minor depression (e.g., Burkhouse et al. 2015), criteria for minor depression included the presence of a criterion A symptom plus at least one symptom from criterion B, which lasted for at least 2 weeks and resulted in clinically significant impairment. Notably, all of the results in this study were maintained when we excluded children with minor depression and focused solely on diagnoses of MDD.

In our sample, the BDI-II demonstrated excellent internal consistency ($\alpha = 0.93$).

Procedure

Participants were recruited from the community through a variety of means (e.g., television and online advertisements). Parents were initially screened over the phone to determine eligibility. Upon arrival at the laboratory, participants were asked to provide informed consent and children were asked to provide an assent to participate in the study. Following this, parents were administered the SCID-I by a research assistant. Next, the parent was administered the KSADS-PL by a separate interviewer, who later administered the KSADS-PL and questionnaires to the child. Interviewers encouraged children to ask questions if they were unsure about what specific items on each questionnaire meant. This project was approved by the University's Institutional Review Board.

Results

An initial examination of the data revealed the presence of some missing data; however, none of the variables was missing more that 6%. Given the presence of missing data, we examined whether the data were missing at random, thereby justifying the use of data imputation methods for estimating missing values (Schafer and Graham 2002). Little's missing completely at random (MCAR) test, for which the null hypothesis is that the data are MCAR (Little and Rubin 2002) was non-significant, $\chi^2(28), = 28.84$, $p = 0.42$, supporting the imputation of missing values with the estimation-maximization algorithm (Moon 1996; Schafer and Graham 2002).

We first examined potential relations between child questionnaire and diagnostic measures, including current depressive symptoms and levels of positive affect, children's history of depression diagnoses, and CR and suppression use. We found that children who evidenced higher current depressive symptoms displayed significantly less positive affect, $r(458) = -0.28$, $p < 0.001$, and were significantly more likely to have a history of depressive diagnosis, $r(458) = 0.25$, $p < 0.001$. Additionally, children who reported using CR more often also reported significantly higher frequency of suppression use, $r(458) = 0.33$, $p < 0.001$. Next, we examined potential associations between demographic variables (parent and child age and sex, family income) and children's history of depression diagnoses as well as their current depressive symptoms and levels of positive affect. We found that children of younger, compared to older, parents had significantly higher levels of depressive symptoms, $r(458) = -0.11$, $p = 0.02$, and were more likely to have a history of depression diagnoses, $r(458) = -0.09$, $p = 0.05$. In addition, children who attended the assessment with their fathers exhibited significantly higher depressive symptom levels than did children who attended the assessment with their mothers, $t\ (456) = -2.01$, $p = 0.045$, $r_{effect\ size} = 0.01$. Finally, children with lower, compared to higher, family income exhibited significantly higher depressive symptoms, $r(458) = -0.10$, $p = 0.046$. None of the other analyses was significant (lowest $p > 0.06$).

Cognitive Reappraisal

Turning to our primary analyses, we first conducted a logistic regression analysis with parents' history of MDD and children's levels of CR, and their interaction, entered as predictor variables and children's history of depressive diagnoses as the criterion variable. As can be seen in Table 2, although the main effects of parent MDD history and child CR were both nonsignificant, there was a significant parent MDD × child CR interaction. To determine the form of this interaction, we examined the main effect of child CR separately in children with and without a parent history of MDD. Among children with a parent history of MDD, we found that higher levels of CR were associated with significantly lower rates of lifetime depression, *Wald* = 6.74, $p = 0.009$, OR = 0.42 (Fig. 1). In contrast, there was no significant association between CR and depression history among children with no history of parent MDD, *Wald* = 0.41 $p = 0.52$, OR = 1.26.

To examine the robustness of the relation between child CR and lifetime depression diagnoses among children with a parent history of MDD, we conducted a number of follow-up tests. The relation was maintained when we accounted for the influence of children's current depression by excluding

Table 2 Results of the logistic and linear regression analyses focused on child use of cognitive reappraisal

	Child Depressive Diagnoses			Child Depressive Symptoms			Child Positive Affect		
	Wald	*p*	OR	*t*	*p*	$r_{partial}$	*t*	*p*	$r_{partial}$
Child CR	0.41	0.52	1.26	−4.20	0.001	− 0.20	2.40	0.02	0.11
Parent MDD	1.56	0.21	1.56	2.75	0.006	1.30	2.10	0.04	0.10
Parent MDD × Child CR	5.05	0.03	0.33	1.24	0.21	0.06	1.20	0.05	0.09

CR Cognitive Reappraisal, *MDD* Major Depressive Disorder, *OR* Odds ratio

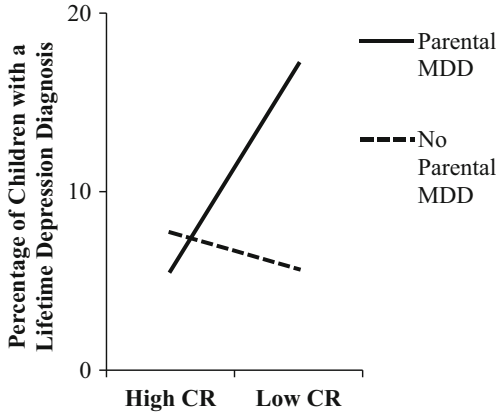

Fig. 1 The relation between child cognitive reappraisal (CR) use and child depression diagnoses among children with and without a parent history of Major Depressive Disorder (MDD)

children with a current depression diagnosis and including children's current depressive symptoms as a covariate, *Wald* = 3.91 p = 0.048, OR = 0.48, suggesting that these results were at least partially independent of children's current depression. The results were also maintained when we excluded children of parents with current MDD from the analyses and included parents' current depressive symptoms as a covariate, *Wald* = 4.83 p = 0.03, OR = 0.48, suggesting that they were also not due only to current depression in the parents. Finally, the relation was maintained when we statistically controlled for a number potential demographic influences that were related to children's depression history (i.e., parent age and sex and family income), *Wald* = 6.42, p = 0.01, OR = 0.41.

Next, we ran a series of linear regression analyses to examine the main and interactive effects of child CR and parent MDD history on children's current depressive symptoms and positive affect (Table 2). Focusing first on levels of depressive symptoms, we found that the main effects of CR and parent MDD were significant. However, the child CR × parent history of MDD was nonsignificant. Therefore, even after statistically controlling for the influence of parents' MDD history, higher levels of CR were associated with lower depressive symptoms in children and the magnitude of this relation was similar for children with and without a parent history of MDD. Focusing next on children's levels of positive affect, the main effect of child CR was significant, as was the main effect of parent MDD. Importantly, there was also a significant parent MDD × child CR interaction predicting children's levels of positive affect. To determine the form of this interaction, we examined the relation between CR and positive affect separately among children with and without a parent history of MDD. We found a significant, positive association between CR and levels of positive affect that was stronger among children with a parent history of MDD, $t(200) = 5.13$, $p < 0.001$, $r_{partial} = 0.34$, than among children with no parent history of MDD, $t(256) = 2.40$, $p = 0.02$, $r_{partial} = 0.15$. The relation between child CR and levels of positive affect among children with a parent history of MDD was maintained when we excluded children with a current depression diagnosis from the analyses and included children's depressive symptoms as a covariate, $t(194) = 4.69$, $p < 0.001$, $r_{partial} = 0.32$. Similarly, the results were maintained when we excluded children of parents with a current MDD diagnosis and included parent depressive symptoms, $t(178) = 5.27$, $p < 0.001$, $r_{partial} = 0.37$, or when we statistically controlled for parent age and sex and family income, $t(200) = 5.06$, $p < 0.001$, $r_{partial} = 0.34$.

Suppression

We then conducted similar analyses focusing on children's use of suppression (Table 3). These analyses were identical to those described above for CR. Focusing first on children's history of depression diagnoses, neither the main effect of suppression, or parent MDD history, nor their interaction, was significant. Turning next to children's current depressive symptom levels, the main effects of suppression and parent MDD history, as well as the suppression × parent history of MDD interaction, were all significant (Table 3). To determine the form of this interaction, we examined the main effect of suppression separately in children with and without a parent history of MDD. We found that more frequent use of suppression was associated with higher depressive symptoms among children with no parent history of MDD, $t(457) = 2.65$, $p = 0.009$, $r_{partial} = 0.16$, but not among children with a parent history of MDD, $t(457) = -0.71$, $p = 0.48$, $r_{partial} = -0.05$. As Fig. 2 illustrates, levels of depressive symptoms were elevated for children with a history of parent MDD, regardless of whether they were high or low on suppression. In contrast,

Table 3 Results of the logistic and linear regression analyses focused on children's use of suppression

	Child Depressive Diagnoses			Child Depressive Symptoms			Child Positive Affect		
	Wald	p	OR	t	p	$r_{partial}$	t	p	$r_{partial}$
Child Suppression	0.53	0.47	1.64	2.79	0.005	0.13	– 0.95	0.34	– 0.04
Parent MDD	2.31	0.13	0.17	2.42	0.02	0.11	2.43	0.02	0.11
Parent MDD × Child Suppression	1.96	0.16	0.29	−2.42	0.02	0.11	1.46	0.15	0.07

MDD Major depressive disorder, *OR* Odds ratio

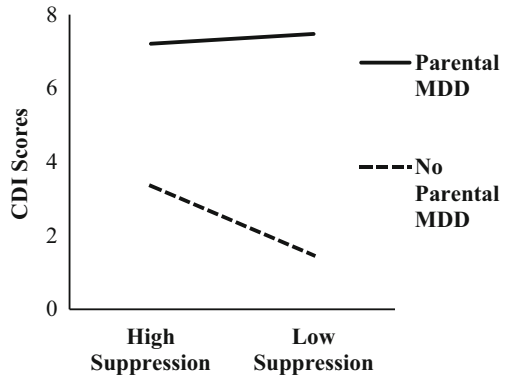

Fig. 2 The relation between child suppression use and children's levels of depressive symptoms among children with and without parent history of Major Depressive Disorder (MDD). CDI = Children's Depression Inventory

levels of depressive symptoms were generally low for children with no parent history of MDD unless they used high levels of suppression.

As before, we conducted a series of follow-up analyses to examine the robustness of this relation. The relation between suppression and levels of depressive symptoms among children with no parent history of MDD was maintained when we excluded children of parents with a current MDD diagnosis and included parent depressive symptoms, $t(255) = 2.49$, $p < 0.01$, $r_{partial} = 0.15$, and when we controlled for parent age and sex and family income, $t(457) = 2.47$, $p = 0.01$, $r_{partial} = 0.16$.

Focusing next on examining the main and interactive effects of children's use of suppression and parent MDD history on children's positive affect, we found a significant main effect of parent MDD history, but no significant main effect of suppression, or suppression × parent history of MDD interaction (Table 3).

Exploratory Analyses

Finally, we conducted a series of exploratory analyses to determine whether any of the relations examined was moderated by demographic differences between the children. Specifically, we examined the potential moderating influence of child sex, age, and race/ethnicity. None of these moderation analyses was significant (lowest $p = 0.21$).

Discussion

The goal of this study was to examine the moderating role of children's use of CR and suppression within the context of risk for the intergenerational transmission of depression. We predicted that, among children with a family history of MDD, those who reported greater use of CR would exhibit lower rates of lifetime depressive disorders, lower current depressive symptoms, and higher levels of positive affect. We also hypothesized that, among children of parents with MDD history, those reported greater use of suppression would exhibit higher rates of depressive disorders, higher depressive symptoms, and lower positive affect. Our analyses partially supported these hypotheses. Specifically, we found that, among children with a parent history of MDD, those who reported using CR more often were less likely to have a history of depressive diagnoses, compared to children who report less frequent use of this ER strategy. Parallel results were observed for children's positive affect in that, among children with a parent history of MDD, those who reported using CR more often reported higher current levels of positive affect. Additionally, independent of parent MDD history, greater use of CR was associated with lower levels of current depressive symptoms in children.

These findings extend previous research examining the buffering effects of children's ER strategies in the intergenerational transmission of depression (Silk et al. 2006) and highlight the specific role of children's use of CR. Previous research has suggested that the relation between CR and depressive symptoms is stable across adolescent and adult populations (Garnefski and Kraaij 2006) and the current results suggest that this relation is observed among pre-adolescent children as well. Given that positive emotions have a profound impact on resilience to and coping with depressive symptoms (Santos et al. 2013), the findings are consistent with the hypothesis that CR may reduce risk for children with a parent history of MDD, at least partially, through increasing children's positive affect. However, longitudinal research is needed to conclusively determine the direction of influence. Taken together, the findings of this study highlight the role of child ER, specifically CR use, as an important target for intervention among children with a parent history of MDD.

Focusing on suppression, we found no evidence for its effect on children's history of depressive diagnosis. When we examined the main and interactive effects of child suppression and parent history of MDD on children's depressive symptoms, we found that more frequent use of suppression was associated with higher current levels of depressive symptoms, particularly among children with no history of parent MDD. Specifically, it appears that children's depressive symptoms are higher among those with parent MDD history regardless of their use of suppression, whereas among children with no parent MDD history, those who used suppression more often had higher depressive symptoms, compared to children who used suppression less. In contrast, suppression was not significantly associated with children's history of depressive disorders. These results suggest that, although suppression may impact children's depressive symptoms, its impact on children's depressive diagnosis is more limited than anticipated. It is unclear why we did not detect the effect of suppression on children's positive mood as well, but this suggests that, although suppression may affect children's depressive symptoms, it does so not via decreasing children's positive affect.

Although not a primary focus of our study, we also found that children of younger parents, those from a family with lower annual income, and those who came in for the appointment with their fathers evidenced higher current depressive symptoms. Although the negative association between family income and child depressive symptoms is well described in literature (e.g., Tracy et al. 2008), less is known about the association between parent age and sex of a participating parent and children's depressive symptoms. We should also note that parent age was significantly correlated with family income in our sample ($r = 0.38$, $p < 0.001$), which could, at least in part, explain the association between younger parental age and higher children's depressive symptoms. It is also possible that these relations are due to other influences (e.g., parent and child life stress). Future research is needed to examine this possibility.

The study demonstrates several important strengths. Specifically, we used structured clinical interviews to assess parent and child depression histories. Moreover, we used multiple informants to determine children's diagnoses (i.e. parent and child reports), as recommended by previous research (Goodman 2007; Kraemer et al. 2003). Additionally, the age range of children in the sample allowed the examination of the association between the habitual use of CR and depression in pre-adolescent children, which has not been described before. This said, there were limitations as well, which provide suggestions for future research. First, the cross-sectional design of the study precludes us from drawing any conclusions about the direction of influence. Future research is needed to determine whether CR predicts prospective changes children's depressive symptoms and positive affect. Research is also needed to determine whether interventions designed to improve children's use of CR may reduce risk for depression in children of depressed parents. A second limitation is that we only assessed the frequency with which children reported using CR, as opposed to their effectiveness in using this ER strategy. Since the frequency of CR use may not be synonymous with children's effectiveness in employing the strategy, future studies could use laboratory paradigms to assess CR ability and examine potential interactive effects with parent history of MDD on child depression. Third, given the poor internal consistency for Suppression subscale of the ERQ in our sample, our findings using this measure should be interpreted with caution. Finally, we examined children's histories of both major and minor depressive episodes. Although the findings regarding the influence of child CR use were maintained when we focused solely on children's history of MDD, only 26 children had a history of MDD and future studies are needed to replicate these results using larger sample sizes. This said, the similarities in the course and the outcomes between major and minor depression (Kessler et al. 1997) warrant the inclusion of minor depression, in addition to major depression, in future studies to examine both mild and severe forms of depression in children. Fourth, given that rates of depression rapidly increase in adolescence (Cyranowski et al. 2000; Lewinsohn et al. 1994), future research using adolescent samples is needed to examine whether our findings generalize to this population. Finally, although we focused on the moderating role of children's ER strategies, the intergenerational transmission of depression is a complex process that likely involves a number of other influences, including the characteristics of the parents' depression (e.g., severity, timing) and additional stressors and resources in the child's life. Additionally, we did not investigate the mechanisms by which ER skills develop in these children. Future studies are needed to determine how children's ER strategies fit within these broader, more complex models of risk.

In summary, the current results support and extend prior research by highlighting an important, modifiable factor in children with a parent history of depression, which could be targeted to reduce risk for the development of depression in these children. Specifically, even among high risk children (those with a parent history of MDD), children who reported greater use of CR had rates of depression and levels of depressive symptoms and positive affect that were similar to those observed in children with no parent history of depression. These findings suggest that early interventions aimed at increasing the use of CR may be beneficial for children who are at a higher risk of depression due to parent depression history.

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Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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