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## Parent predictors of adolescents' explanatory style

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### Abstract

The current study tested the prospective relations (six month lag) between three aspects of the parent-child relationship at Time 1 (T1) and adolescents' explanatory styles at Time 2 (T2): caregiving behaviors, parents' explanatory style for their own negative events, and parents' explanatory style for their children's negative events. The sample included 129 adolescents aged 11 to 14 years at baseline and their parents. Adolescents reported on their own explanatory style and their parents' caregiving behaviors; parents self-reported on their caregiving behaviors and their explanatory style for their own and their children's events. Regression analyses identified maternal acceptance as a significant predictor of T2 adolescents' explanatory style. Marginal effects emerged for fathers' psychological control and fathers' explanatory style for their children's events. Findings suggest that the ways parents – especially mothers - interact with their children may play a role in adolescents' cognitive vulnerability to depression.

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Cognitive theories of depression such as Beck's theory (Beck, 1987) and the hopelessness theory (Abramson, Metalsky, & Alloy, 1989) have received considerable support. Negative styles of thinking such as pessimistic or hopeless explanatory styles consistently predict subsequent depression (for a review see Lakdawalla, Hankin, & Mermelstein, 2007) and therapies designed to modify pessimistic explanatory style and other negative thinking styles prevent and treat depression (e.g., Horowitz & Garber, 2006; Weisz, McCarty, & Valeri, 2006). Given the relevance of explanatory style to depression, developing a clear understanding its development is an important step for the field.

One likely area of influence on explanatory styles in adolescence is the parent-child relationship. Strong family relationships are critical to youths' positive adjustment in the

face of adversity (Luthar & Zelazo, 2003), and the family is believed to be the most important context for the socialization of youths' responses to stress (Kliewer, Sandler, & Wolchik, 1994). Parents may shape the development of their children's explanatory styles by expressing pessimistic explanations in response to negative events in their own lives (i.e., modeling), or similarly by articulating pessimistic interpretations of the causes of events in their children's lives (i.e., inferential feedback) (Garber & Flynn, 2001; Hankin et al., 2009). Over time, youths may internalize these pessimistic messages, and employ similar explanatory styles. Further, parents' general style of interacting with their children is believed to have implications for how youths explain the causes of negative events. Chronic exposure to psychological control (e.g., criticism, shame, intrusiveness; Barber, 1996) and low levels of warmth and acceptance may lead youths to develop low self-worth (e.g., Garber & Flynn, 2001), or promote feelings of shame or self-criticism (e.g., Koestner, Zuroff, & Powers, 1991). Through factors such as these, negative parenting may in turn lead youths to develop more pessimistic explanatory styles. Further, chronic exposure to negative parenting may lead adolescents to develop negative expectations about relationships more broadly (e.g., expect stressful, critical interactions with other adults).

The literature in youth samples suggests that parents' explanations of their children's events and parents' caregiving behaviors correlate cross-sectionally with youths' explanatory style. For example, in a sample of children and early adolescents, Bruce and colleagues (2006) found that negative parenting corresponded with more, and positive parenting with less, pessimistic youth explanatory style. Garber and Flynn (2001) obtained similar results in a sample of sixth graders, and also found that mothers' explanatory style for their children's events significantly correlated with their children's explanatory style. A few studies have found parenting and parents' explanations for their children's events predict youths' explanatory styles over time (Garber & Flynn, 2001; Mezulis, Funasaki, & Hyde, 2011; Mezulis, Hyde, & Abramson, 2006). In Garber and Flynn's (2001) study, maternal psychological control predicted more pessimistic adolescent explanatory styles one year later. Further, in a study of the development of cognitive styles – a broader cognitive vulnerability construct that includes explanatory style – Mezulis et al. (2011) found that mothers' expressed negative emotion and negative explanations for child failures at age 11 predicted increases in negative cognitive style through age 15. Mezulis et al. (2006) examined the effects of parenting and parents' explanations for child failure on negative cognitive style in children, and found that maternal (but not paternal) anger expression and negative explanations for child failure significantly interacted with negative events to predict more negative cognitive style. These studies indicate that parenting and parents' cognitions, especially mothers', have key implications for the development of explanatory style in youth.

The literature linking parents' explanatory styles for their own events to adolescent explanatory style provides some evidence of a relation, but the evidence is mixed. Seligman et al. (1984) found cross-sectional evidence that the more pessimistic parents are about their own events, the more pessimistic their children are. Further, research with undergraduates has shown that young adults with negative cognitive styles are more likely than their peers to have mothers (but not fathers) with negative cognitive styles (Alloy et al., 2001). However,

other studies have found little to no support for this relation (e.g., Garber & Flynn, 2001; Mezulis et al., 2011).

The current literature in youth samples, while informative, has several limitations including few prospective, longitudinal studies, a tendency to examine parent factors in isolation, and/or limited attention to fathers (for exceptions, see Garber & Flynn, 2001; Mezulis et al., 2006; Mezulis et al., 2011). Further, few studies have explored these effects in early adolescence. Early adolescence is a key developmental period for explanatory style, as this is the window in which explanatory styles begin to show increasing continuity (e.g., Hankin et al., 2009). While explanatory style exhibits some variability even into adulthood (Hankin et al., 2009), identifying predictors of explanatory style as it becomes more trait-like may be particularly relevant for understanding the development of cognitive vulnerability to depression. Further, early adolescence immediately precedes the significant spike in depression rates in middle adolescence (Hankin et al., 1998); identifying predictors of cognitive vulnerability in early adolescence may be highly informative for developmental theories of depression and prevention efforts.

The present study tests whether current mother and father parenting behaviors and explanatory styles for both parents' and their children's events prospectively predict early adolescents' explanatory styles six months later. The study examined the following hypotheses: First, higher levels of parental acceptance would predict less pessimistic explanatory styles in adolescents, while higher levels of psychological control would predict more pessimistic explanatory styles; Second, more pessimistic parental explanatory styles about negative events in their children's lives would predict more pessimistic explanatory styles in adolescents (i.e., the more pessimistic parents are about children's negative events, the more pessimistic their children will be); Third, more pessimistic parental explanatory styles for their own events would predict more pessimistic explanatory styles in adolescents. The last hypothesis was more exploratory in nature given the inconsistent findings in the literature.

## Methods

### Participants and Procedures

This study uses a subsample from a randomized controlled trial of a cognitive behavioral depression prevention program (Gillham et al., 2012). This study and the larger trial were approved by the University of Pennsylvania's Institutional Review Board. Students aged 10–14 from five middle schools in a suburban area in the northeastern United States and their parents were initially contacted by mail. Students for whom we obtained parental consent and student assent were screened for depressive symptoms. Students demonstrating elevated levels of depressive symptoms were first offered places in the study as they are at risk of developing clinical depression; the remaining students were offered places until all slots were filled. In some schools all interested students were able to participate regardless of depressive symptoms. Mean screening scores for the full sample were slightly higher than average but within one standard deviation of the standardization sample means for the depression measures used. Participants were randomly assigned to one of two intervention conditions or to a control condition. Only participants randomized to the control condition

( $N = 129$ ) were used in the current study. Participants from the intervention conditions were excluded as they received interventions targeting adolescent explanatory style. Further details regarding recruitment and the sample from the larger trial are presented elsewhere (Gillham et al., 2012).

In the larger study, students completed assessments at baseline and every 6 to 12 months thereafter for more than three years. The current study employs data from the first two timepoints – baseline (T1) and the six month assessment (T2). In the current study, 129 adolescents participated at T1; 116 of those participants completed measures at T2.

Adolescents ranged in age from 11 to 14 years ( $M = 12.05$ ,  $SD = 1.02$ ) at baseline. Forty-nine percent of students were male, and 48.3%, 28.4%, and 23.3% of students were in 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grades respectively. In terms of race, 77.6% were Caucasian, 12.9% African American, 4.3% Asian American, 0.9% Latino/a, and 4.3% identified as “other.” At baseline, participant depression scores on the Children’s Depression Inventory (Kovacs, 2001) were within one standard deviation of the standardization sample means (Current study:  $M = 11.04$ ,  $SD = 8.79$ ; Standardization samples: 12 and younger:  $M = 10.5$ ,  $SD = 7.3$ ; 13 and older:  $M = 9.8$ ,  $SD = 7.3$ )

Fewer parents completed measures than children (mother  $n = 104$ ; father  $n = 82$ ). We compared families where mothers did and did not complete measures, and compared families where fathers did and did not complete measures on the study variables and demographic factors (i.e., child age, gender, race, grade, mother education, father education, marital status). Families with father-reported data had higher levels of father education than families without father-reported data,  $t(101) = -2.98$ ,  $p = .004$  and were more likely to be married,  $\chi^2(1) = 19.82$ ,  $p < .001$ . Families identifying as racial minorities were less likely to have father-reported data than families identifying as Caucasian,  $\chi^2(1) = 17.62$ ,  $p < .001$ . No other differences were found.

Attrition analyses were conducted using independent samples t-tests and chi-square tests to compare families where the adolescent did ( $n = 117$ ) and did not ( $n = 12$ ) participate at Time 2 (T2) on all demographic and study variables at Time 1 (T1). No differences emerged.

## Measures

**Adolescent explanatory style**—Adolescents’ current explanatory style was measured using the Negative Events composite from the Children’s Attributional Style Questionnaire (CASQ-N; Seligman et al., 1984). The CASQ-N presents adolescents with 24 forced-choice items describing hypothetical negative scenarios. Each item varies one of three causal dimensions (internality, stability, globality) and holds the other two dimensions constant. Internal, stable, or global response choices receive a score of 1; external, temporary, or specific responses receive a score of 0. Scores on all items are summed to generate a total score. Higher scores reflect more pessimistic (internal, stable, global) explanatory styles (T1  $\alpha = .61$ , T2  $\alpha = .69$ ). The CASQ-N has demonstrated fair test-retest reliability (Seligman et al., 1984), and is frequently used in research examining explanatory styles as a risk factor for depression.

**Parental acceptance and psychological control**—Mother and father acceptance and psychological control were measured using the corresponding subscales (10 items per subscale) from the Children’s Report of Parenting Behavior Inventory Short-Form (CRPBI-R, Schludermann & Schludermann, 1988). Adolescents and mothers reported on their current impressions of mothers’ parenting; adolescents and fathers’ reported on their current impressions of fathers’ parenting. The CRPBI-R parent and adolescent questionnaires used the same items, with slight variations in wording to reflect adolescents versus self (parent) report. Sample items include “I believe in showing my love for my child” and “(my father) says if I really cared for him, I would not do things that cause him to worry” for acceptance and psychological control respectively. Items were rated on a three point scale ranging from “1 – not like my parent/me” to “3 – a lot like my parent/me” and then summed within subscale. The CRPBI-R has demonstrated adequate reliability and validity (Schludermann & Schludermann, 1988). Higher scores reflect higher levels of acceptance and psychological control (Acceptance: Mother  $\alpha = .93$ ; Father  $\alpha = .99$ ; Psychological control: mother  $\alpha = .74$ , Father  $\alpha = .99$ ).

**Parent explanatory style**—Maternal and paternal current explanatory styles were measured using the negative events composite of the Attributional Style Questionnaire (ASQ; Peterson et al., 1982). The ASQ presents six hypothetical negative situations; adults then indicate the major cause for each event. Parents rate the cause for each of the six scenarios separately for internality, stability, and globality on a 7-point scale, generating 18 ratings. All 18 ratings are summed. Higher scores reflect a more pessimistic explanatory style (Mother  $\alpha = .88$ ; Father  $\alpha = .93$ ). The ASQ has demonstrated adequate reliability and validity (Peterson et al., 1982).

**Parent explanatory style for adolescent events**—Mothers’ and fathers’ current explanations for adolescent events were measured with the Negative Events composite of the Child Attributional Style Questionnaire-Parent Version (CASQ-P; Garber & Flynn, 2001). Parents are given 24 hypothetical scenarios and asked to imagine that the situation happens to their child. Parents select one of two explanations that best captures how they think about the cause of each situation. Each item varies one of three causal dimensions: internality, stability, globality. Internal, stable, or global response choices receive a score of 1; external, temporary, or specific responses receive a 0. All items are summed; higher scores reflect a more pessimistic explanatory style. Coefficient alphas for this composite were low (Mother  $\alpha = .37$ , Father  $\alpha = .35$ ) but similar to previously reported alphas (e.g.,  $\alpha = .40$ , Chronis, Gamble, Roberts, & Pelham, 2006)

## Data Analytic Plan

Correlations were computed among study variables and demographic factors. Covariates were included in regressions if they significantly correlated with T2 adolescent explanatory style. To test the primary hypotheses that parent factors would predict adolescent explanatory style, path analytic models were tested with MPlus software (Version 6.0, Muthén and Muthén, 1998–2010). Full Information Maximum Likelihood Estimation with missing data (FIML) was used to account for missing scores. FIML uses data from all cases with some exceptions. FIML excludes cases if they are 1) missing data on predictors, or 2)

missing data on all outcomes. Separate models were tested for mother and father variables and for parent and child reports, yielding four models. All models controlled for baseline adolescent explanatory style.

For each model, a backwards stepwise regression was tested. All predictors for a given model were initially entered into the regression. Non-significant predictors were systematically removed, starting with the predictor with the smallest  $z$  score and  $p$  value, and continuing until only predictors with a significance value less than .10 remained. To test whether effects varied by youth age or gender, moderation models were tested for all predictor variables. Different procedures were used for continuous (age) and categorical (gender) moderators. Age moderation effects were tested by centering the age and parent variables, then forming the interaction terms as the cross-product of the centered variables (see Aiken & West, 1991). Gender moderation effects were tested using two-group analyses. For each predictor, we tested two nested models: 1) a fully constrained model where all paths were constrained to be equal across the two genders, and 2) a partially constrained model where only the path between the parent variable and T2 adolescent explanatory style was permitted to vary across genders. Chi square difference tests comparing the fit of the fully constrained and partially constrained models were then computed; a significant difference between the chi square values for the two models would indicate that the path between the parent variable and T2 adolescent explanatory style differed for boys and girls.

## Results

### Preliminary Analyses

Means, standard deviations, and correlations for all primary study variables are presented in Table 1. Most of the correlations between T1 and T2 adolescent explanatory style and the parent variables were significant, small to medium in size, and in the expected direction, providing preliminary support of the hypothesized relations between parent factors and adolescent explanatory style. Correlations with adolescent explanatory style were generally stronger for adolescent reports than parent reports of acceptance and psychological control, and for parents' explanations for adolescent events than for parents' explanations for their own events. Overall, the correlations suggest that higher levels of parental acceptance are associated with less pessimistic adolescent explanatory styles, higher levels of parental psychological control are associated with more pessimistic adolescent explanatory styles, and parents and adolescents tend to explain negative events in the adolescents' lives in a similar way (i.e., the more pessimistic parents are about their children's events, the more pessimistic their children are). There was little evidence of a relation between parents' explanatory style for their own negative events and adolescents' explanatory style; of the four correlations, only the correlation between mother explanatory style and T1 adolescent explanatory style was significant.

Correlations between the potential covariates (i.e., child age, gender, race, mother education, father education, marital status) and T2 adolescent explanatory style were non-significant with the exception of mother education; higher levels of mother education were associated with less pessimistic adolescent explanatory styles ( $r = -.22, p = .02$ ). Mother education was included as a predictor in the subsequent regression models



## Primary Analyses

In the stepwise regression analyses for mother variables, both child-reported and mother-reported maternal acceptance significantly predicted less pessimistic explanatory style, child report  $\beta = -.22, p = .002, n = 116$ ; mother report  $\beta = -.18, p = .018, n = 96$ . No other variables were significant. For the father regression analyses, no primary study variables emerged as significant predictors of adolescents' explanatory style. Two marginal effects emerged. For the child-reported model, fathers' psychological control marginally predicted more pessimistic explanatory styles,  $\beta = .13, p = .074, n = 107$ . For the father-reported model, fathers' pessimistic explanatory style for their child's negative events marginally predicted more pessimistic adolescent explanatory styles,  $\beta = .147, p = .079, n = 71$ . In addition, in the father-reported model, mother education significantly predicted adolescent pessimistic explanatory style,  $\beta = -.136, p = .042, n = 71$ , such that higher mother education was associated with less pessimistic adolescent explanatory styles. This effect was not present in the other three models.

Moderation analyses by gender and age were conducted for all predictors. With respect to gender, two significant and one marginal effect emerged. For all three effects, predictors were significantly related to girls' but not boys' explanatory style. Gender significantly moderated the relation between mother's explanatory style for events in her own life and adolescent's explanatory style,  $\chi^2 = 4.382 (1), p = .036, n = 94$ . Unexpectedly, the more pessimistic mothers were, the less pessimistic girls were,  $\beta = -.280, p = .006$ . Gender significantly moderated the relation between father-reported psychological control and adolescents explanatory style,  $\chi^2 = 3.9281 (1), p = .047, n = 74$ , and marginally moderated the relation between child-reported father psychological control and adolescent explanatory style,  $\chi^2 = 2.996 (1), p = .083, n = 107$ . For both reports, the more psychologically controlling fathers were, the more pessimistic girls were: father-report,  $\beta = .21, p = .041$ ; child-report,  $\beta = .254, p = .005$ .

Age marginally moderated the relations between child-reported father psychological control and adolescents explanatory style,  $\beta = -.117, p = .07, n = 107$ , and between fathers' explanatory style for their own events and adolescent explanatory style,  $\beta = .142, p = .086, n = 68$ . Post-hoc probing of the interactions at the mean and one standard deviation above and below the mean revealed that child-reported father psychological control significantly predicted adolescent explanatory style at age 11,  $\beta = .289, p = .010$ , and 12,  $\beta = .149, p = .043$ , but not at age 13,  $\beta = .009, p = .931$ . In contrast, fathers' explanatory style for their own events was unrelated to adolescents' explanatory style at age 11 and 12, but was marginally related at age 13,  $\beta = .224, p = .053$ . Taken together, the age and gender moderation findings provide some preliminary evidence that fathers' psychological control may indeed be important for adolescent explanatory style, but only for girls and for younger adolescents. Further, both mothers' and fathers' explanatory styles for their own events may have some implications for adolescent explanatory style, but the effects varied by both gender and age and in unexpected ways.

## Discussion

The current study explored how parents may contribute to the way their children explain negative events in their lives. Specifically, the study tested whether parents' parenting behaviors, their explanations for negative events in their own lives, and their explanations for negative events in their children's lives predicted early adolescents' explanatory style six months later. Adolescent and mother reports of maternal acceptance significantly predicted less pessimistic adolescent explanatory style six months later. Fathers' parenting and explanatory styles did not significantly predict adolescent explanatory style. However, adolescent reported paternal psychological control and fathers' pessimistic explanatory styles for their children's negative events both marginally predicted more pessimistic adolescent explanatory style six months later. No other parent predictors were significant. The strongest support was thus for maternal acceptance, suggesting that mothers' behaviors that convey warmth and support may be especially relevant for early adolescents' understanding of and explanations for negative events in their lives. These findings are particularly salient given that explanatory styles are believed to show increasing continuity during early adolescence (e.g., Hankin et al., 2009). Identifying predictors of explanatory style during the developmental period in which they begin to stabilize can inform our understanding of what predicts pessimistic explanatory style during early adolescence, and potentially what contributes to cognitive vulnerability across the lifespan.

The current findings are consistent with previous literature highlighting the importance of parenting for youths' explanatory style (e.g., Bruce et al., 2006; Garber & Flynn, 2001), especially mothers' parenting, and builds upon these findings by exploring these relations longitudinally and with both mothers and fathers. There was limited evidence for the assertion that how parents explain the causes of negative events in their children's lives ("inferential feedback") is important for adolescents' explanatory style; the evidence was present for fathers but not mothers and was only marginally significant. The current study failed to find a main effect of parents' explanatory style for negative events in their own lives and adolescents' explanatory style; almost no support has been found for this relation in youth (e.g., Garber & Flynn, 2001; Mezulis et al., 2011; for a cross-sectional exception, see Seligman et al., 1984). Although there was some evidence that gender and age moderated the effects of both mothers' and fathers' explanatory styles for their own events on adolescent explanatory style (i.e., mother's styles negatively predicted girls' but not boys' explanatory styles; fathers' styles positively predicted older but not younger adolescents' explanatory styles), the pattern of findings was unexpected and at times counter-intuitive (e.g., the more pessimistic mothers were, the *less* pessimistic their daughters were). Additional work will be necessary to clarify what, if any, role parents' explanatory styles for their own events play in adolescent explanatory style.

It is interesting to note that findings were stronger for mothers than fathers. It is possible that mothers' parenting is simply a stronger predictor of adolescent explanatory style than fathers' parenting; studies that have examined both mother and father predictors of youth explanatory style have generally found more evidence for mothers (Alloy et al., 2001; Mezulis et al., 2006). However, alternative explanations are plausible. First, the sample sizes were smaller for the father regressions due to lower father participation than mother



participation in assessments; the small sample size may have limited power to detect effects for father reported variables. Second, adolescent age and gender both significantly and/or marginally interacted with father psychological control such that father psychological control was significantly associated with more pessimistic explanatory style in girls and in younger (11 yrs) adolescents, but not in boys or older adolescents (12 and 13 yrs). While mothers' acceptance may be important for all adolescents (perhaps a result of their often primary caretaking role), perhaps fathers' parenting is only predictive of adolescent explanatory style for those who are most vulnerable. There is some evidence to suggest that girls are more sensitive to the family environment than boys (Davies & Lindsay, 2004). Further, explanatory style may be less stable in younger than older adolescents, and thus may be more sensitive to the effects of parenting. It is important to note, however, that an opposing age-related pattern was found for fathers' explanatory styles. Future work with larger samples will be essential for clarifying what role fathers play in adolescent explanatory style.

By identifying parent factors that predict adolescents' explanatory style, the current study contributes to the understanding of the development of cognitive vulnerability for depression in early adolescence – the developmental period immediately preceding the spike in depression rates - and provides preliminary information to guide prevention efforts. Intervention developers and clinicians interested in reducing cognitive vulnerability to depression in early adolescents may want to consider including a parent component targeting warmth and acceptance. Youth depression prevention and treatment programs that focus explicitly on parenting and the parent-child relationship have yielded promising evidence of the benefits of targeting parent factors (e.g., Compas et al., 2010; Diamond et al., 2010; Beardslee et al., 2007).

This study has a number of strengths including its longitudinal design, use of multiple parent factors, and data from mothers and fathers, yet it also has important limitations. First, while it is reasonable to expect that how parents think about negative events in their children's lives would shape how they discuss these events with their children, the measure used in this study only captures parents' thinking. Measures that capture how parents explain negative events to their children (e.g., observed discussion) would more directly capture parental feedback. Second, the CASQ-P has low internal consistency in the current study. It is essential that the current findings be replicated in future work using a more reliable measure before firm conclusions can be drawn regarding the role of parents' explanatory style for child events in adolescent explanatory style. Third, the sample size and thus power to detect effects is limited, especially for father-reported data and for moderation by age and gender. Finally, in order to capitalize on the largest sample sizes possible for each hypothesis, somewhat different samples were represented in different regression analyses. While this approach improves power by using all available data, it also adds a layer of complexity when interpreting findings.

Several areas for future research are suggested by these findings. First, replication of this study is warranted in a larger, more diverse sample, especially a sample with greater father participation. Second, studies using stronger measurement approaches such as observational methods to measuring inferential feedback or more methodologically strong measures of

adolescent explanatory style could present a richer picture of how parents contribute to early adolescents' explanatory style. Further, exploring the relations between parent factors and youth explanatory style using a broader age range of youth could elucidate whether there are development shifts in parents' effects on youth explanatory style. Finally, exploration of other inter- and intrapersonal factors that might predict youth explanatory style (e.g., sibling or peer relations, stress reactivity, frequency and chronicity of uncontrollable stressors) is merited to better understand how adolescents develop explanatory styles. Ongoing work delineating the developmental origins of cognitive vulnerability to depression is important for developmental theory, and is integral for shaping prevention efforts targeting youth depression.

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## References

- Abramson LY, Metalsky GI, Alloy LB. Hopelessness depression: A theory-based subtype of depression. *Psychological review*. 1989; 96(2):358.
- Alloy LB, Abramson LY, Tashman NA, Berrebbi DS, Hogan ME, Whitehouse WG, ... Morocco A. Developmental origins of cognitive vulnerability to depression: Parenting, cognitive, and inferential feedback styles of the parents of individuals at high and low cognitive risk for depression. *Cognitive Therapy and Research*. 2001; 25(4):397–423. DOI: 10.1023/A:1005534503148
- Barber BK. Parental psychological control: Revisiting a neglected construct. *Child development*. 1996; 67(6):3296–3319. DOI: 10.1111/j.1467-8624.1996.tb01915.x [PubMed: 9071782]
- Beardslee WR, Gladstone TR, Wright EJ, Forbes P. Long-term effects from a randomized trial of two public health preventive interventions for parental depression. *Journal of Family Psychology*. 2007; 21(4):703–713. DOI: 10.1037/0893-3200.21.4.703 [PubMed: 18179342]
- Beck AT. Cognitive models of depression. *Journal of Cognitive Psychotherapy*. 1987; 1:5–37.
- Bruce AE, Cole DA, Dallaire DH, Jacquez FM, Pineda AQ, LaGrange B. Relations of parenting and negative life events to cognitive diatheses for depression in children. *Journal of abnormal child psychology*. 2006; 34(3):310–322. DOI: 10.1007/s10802-006-9019-x
- Chronis AM, Gamble SA, Roberts JE, Pelham WE. Cognitive-behavioral depression treatment for mothers of children with attention-deficit/hyperactivity disorder. *Behavior Therapy*. 2006; 37:143–158. DOI: 10.1016/j.beth.2005.08.001 [PubMed: 16942968]
- Compas BE, Champion JE, Forehand R, Cole DA, Reeslund KL, Fear J, ... Roberts L. Coping and parenting: Mediators of 12-month outcomes of a family group cognitive-behavioral preventive intervention with families of depressed parents. *Journal of Consulting and Clinical Psychology*. 2010; 78(5):623. doi: 10.1037/a0020459 [PubMed: 20873898]
- Davies PT, Lindsay LL. Interparental conflict and adolescent adjustment: Why does gender moderate early adolescent vulnerability? *Journal of Family Psychology*. 2004; 18(1):160–170. DOI: 10.1037/0893-3200.18.1.160 [PubMed: 14992618]
- Diamond GS, Wintersteen MB, Brown GK, Diamond GM, Gallop R, Shelef K, Levy S. Attachment-based family therapy for adolescents with suicidal ideation: a randomized controlled trial. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2010; 49(2):122–131. [PubMed: 20215934]
- Garber J, Flynn C. Predictors of depressive cognitions in young adolescents. *Cognitive Therapy and Research*. 2001; 25(4):353–376. DOI: 10.1023/A:1005530402239

- Gibb BE, Alloy LB, Walshaw PD, Comer JS, Shen GH, Villari AG. Predictors of attributional style change in children. *Journal of Abnormal Child Psychology*. 2006; 34(3):408–422. DOI: 10.1007/s10802-006-9022-2
- Gillham JE, Reivich K, Brunwasser SM, Freres DR, Chajon ND, Kash-MacDonald VM, ... Seligman MEP. Evaluation of a group cognitive-behavioral depression prevention program for young adolescents: A randomized effectiveness trial. *Journal of Clinical Child & Adolescent Psychology*. 2012; 41(5):621–639. DOI: 10.1080/15374416.2012.706517 [PubMed: 22889296]
- Hankin BL, Abramson LY, Moffitt TE, Silva PA, McGee R, Angell KE. Development of depression from preadolescence to young adulthood: Emerging gender differences in a 10-year longitudinal study. *Journal of Abnormal Psychology*. 1998; 107(1):128–140. DOI: 10.1037/0021-843X.107.1.128 [PubMed: 9505045]
- Hankin BL, Oppenheimer C, Jenness J, Barrocas A, Shapero BG, Goldband J. Developmental origins of cognitive vulnerabilities to depression: Review of processes contributing to stability and change across time. *Journal of Clinical Psychology*. 2009; 65(12):1327–1338. DOI: 10.1002/jclp.20625 [PubMed: 19827008]
- Horowitz JL, Garber J. The prevention of depressive symptoms in children and adolescents: A meta-analytic review. *Journal of consulting and clinical psychology*. 2006; 74(3):401. doi: 10.1037/0022-006X.74.3.401 [PubMed: 16822098]
- Kliewer, W.; Sandler, IN.; Wolchik, S. Family socialization of threat appraisal and coping: Coaching, modeling and family context. In: Nestmann, F.; Hunelmann, K., editors. *Social networks and social support in childhood and adolescence*. New York: de Gruyter; 1994. p. 271-292.
- Koestner R, Zuroff DC, Powers TA. Family origins of adolescent self-criticism and its continuity into adulthood. *Journal of Abnormal Psychology*. 1991; 100(2):191. doi: 10.1037/0021-843X.100.2.191 [PubMed: 2040770]
- Kovacs, M. *Children's Depression Inventory manual*. North Tonawanda, NY: Multi-Health Systems; 2001.
- Lakdawalla Z, Hankin BL, Mermelstein R. Cognitive theories of depression in children and adolescents: A conceptual and quantitative review. *Clinical child and family psychology review*. 2007; 10(1):1–24. DOI: 10.1007/s10567-006-0013-1 [PubMed: 17318382]
- Luthar, SS.; Zelazo, LB. Research on resilience: An integrative review. In: Luthar, SS., editor. *Resilience and vulnerability: Adaptation in the context of childhood adversities*. New York: Cambridge University Press; 2003. p. 510-549.
- Mezulis A, Funasaki K, Hyde JS. Negative Cognitive Style Trajectories in the Transition to Adolescence. *Journal of Clinical Child & Adolescent Psychology*. 2011; 40(2):318–331. DOI: 10.1080/15374416.2011.546048 [PubMed: 21391027]
- Mezulis AH, Hyde JS, Abramson LY. The developmental origins of cognitive vulnerability to depression: temperament, parenting, and negative life events in childhood as contributors to negative cognitive style. *Developmental psychology*. 2006; 42(6):1012. doi: 10.1037/0012-1649.42.6.1012 [PubMed: 17087538]
- Muthén, LK.; Muthén, MO. *Mplus user's guide*. 6. Los Angeles: Authors; 1998–2010.
- Peterson C, Semmel A, von Baeyer C, Abramson LY, Metalsky GI, Seligman ME. The attributional style questionnaire. *Cognitive therapy and research*. 1982; 6(3):287–299. DOI: 10.1007/BF01173577
- Schludermann, EH.; Schludermann, SM. *Children's Report on Parent Behavior (CRPBI-108, CRPBI-30) for older children and adolescents (Technical Report)*. Winnipeg, Manitoba, Canada: University of Manitoba; 1988.
- Seligman MP, Peterson C, Kaslow NJ, Tanenbaum RL, Alloy LB, Abramson LY. Attributional style and depressive symptoms among children. *Journal of Abnormal Psychology*. 1984; 93:235–238. DOI: 10.1037/0021-843X.93.2.235 [PubMed: 6725758]
- Weisz JR, McCarty CA, Valeri SM. Effects of psychotherapy for depression in children and adolescents: a meta-analysis. *Psychological Bulletin*. 2006; 132(1):132–149. DOI: 10.1037/0033-2909.132.1.132 [PubMed: 16435960]

**Table 1**

Correlations, Means, and Standard Deviations for Study Variables

	T1CEX	T2CEX	MAccC	MAccM	MConC	MConM	MEx	MExC	FAccC	FAccF	FConC	FConF	FEx	FExC
T1CEX	--	.65***	-.40***	-.14	.31***	.09	.21*	.20*	-.33***	-.10	.20*	.05	.14	.20
T2CEX		--	-.44***	-.31**	.35***	.10	.04	.22*	-.28**	-.11	.26**	.10	.15	.32**
MAccC			--	.26**	-.45***	-.04	-.07	-.33**	.49***	.23*	-.21*	-.35**	-.14	-.27*
MAccM				--	-.14	-.27**	-.13	-.38***	.10	.34**	-.02	-.23*	-.06	-.05
MConC					--	.18	-.05	.04	-.21*	-.10	.48***	.20	.08	.21
MConM						--	.10	.21*	-.08	-.11	.00	.23*	.15	.00
MExp							--	.19	-.17	-.10	.02	-.05	-.02	.06
MExpC								--	-.31**	-.32**	.17	.30**	.17	.32**
FAccC									--	.44***	-.21*	-.27*	-.02	-.33**
FAccF										--	-.20	-.18	-.16	-.21
FConC											--	.23*	.05	.40***
FConF												--	.09	.39***
FEx													--	.24*
FExC														--
Means	8.12	8.08	24.82	36.99	17.46	14.22	11.63	2.91	23.03	25.08	16.77	13.88	11.92	2.86
SD	3.44	3.79	5.25	2.59	4.05	2.72	2.59	1.56	6.32	3.61	4.94	3.46	2.28	1.56

Note. T1CEX = T1 Child Explanatory Style; T2CEX = T2 Child Explanatory Style; MAccC = Maternal Acceptance, Child-Report; MAccM = Maternal Acceptance, Mother-Report; MConC = Maternal Psychological Control, Child-Report; MConM = Maternal Psychological Control, Mother-Report; MEx = Mother Explanatory Style; MExC = Mother Explanatory Style for Child Events; FAccC = Father Acceptance, Child-Report; FAccF = Father Acceptance, Father Report; FConC = Father Psychological Control, Child-Report; FConF = Paternal Psychological Control, Father-Report; FEx = Father Explanatory Style; FExC = Father Explanatory Style for Child Events.

\*  $p < .05$ ,

\*\*  $p < .01$ ,

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