

Interpersonal Vulnerability to Depression in High-Risk Children: The Role of Insecure Attachment and Reassurance Seeking

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This study examined the relation between insecure attachment and depression in a sample of 140 children (69 boys and 71 girls; ages 6 to 14) whose parents have a history of major depressive episodes. In addition, we examined whether this relation was moderated by excessive reassurance seeking. Children completed measures assessing insecure attachment to parents, excessive reassurance seeking, and current depressive symptoms. In addition, children and their parents participated in a semi-structured clinical interview assessing children's current and past history of depressive symptoms and episodes. In line with hypotheses, children who exhibited high levels of both insecure attachment and excessive reassurance seeking experienced higher levels of current depressive symptoms than children who possessed only one or neither of these interpersonal risk factors. Furthermore, the interaction of insecure attachment with excessive reassurance was associated with a past history and greater severity of depressive episodes even after controlling for current depressive symptoms.

A number of theories have been proposed to explain the etiology of depression. One such theory is Bowlby's (1969, 1980) attachment theory. According to Bowlby, early attachment patterns between children and their caregivers play a vital role in both normal and abnormal development. Attachment patterns are thought to derive primarily from the quality and the quantity of contact that the child has with his or her caregivers (Ainsworth, Blehar, Waters, & Wall, 1978). Parents who are sensitive in their caregiving, alert to

their infant's needs, and who react quickly and appropriately to such needs are likely to have infants who develop a secure attachment (Wenar & Kerig, 2000; West, Spreng, Rose, & Adam, 1999). Attachment theorists hypothesize that the formation of secure attachment facilitates the subsequent development of trusting and dependable relationships with others and has important consequences for the child's sense of security, adjustment, and emotions.

Not all children, however, are securely attached to their caregivers. When normal developmental processes are disrupted in some way, a number of types of insecure attachment patterns have been hypothesized to result. Insecure attachment patterns have been posited to serve as risk factors for a diversity of psychological problems, including depression (e.g., Bowlby, 1980; Cummings & Cicchetti, 1990). In line with this hypothesis, numerous studies with both adolescents (e.g., Armsden & Greenberg, 1987; Armsden, McCauley, Greenberg, Burke, & Mitchell, 1990; West et al., 1999) and adults (e.g., Haaga et al., 2002; Hammen et al., 1995; see Blatt & Homann, 1992) have demonstrated that an insecure attachment style is associated with a greater likelihood of experiencing depression. Similarly, research conducted with children has found that higher levels of insecure attachment are significantly associated with higher levels of current de-

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pressive symptoms (e.g., Muris, Mayer, & Meesters, 2000; Graham & Easterbrooks, 2000).

Although preliminary evidence suggests that insecure attachment is associated with depression, several limitations of past research should be noted. First, the majority of past research has simply examined whether insecure attachment is a correlate of *current* depressive symptoms as assessed by self-report measures. It is important to examine whether insecure attachment predicts either past history or future increases in depression above and beyond current depressive symptoms. Furthermore, it is essential to utilize diagnostic interviews, in addition to self-report questionnaires, to assess depression to be able to examine the full range of depression from milder levels of dysphoria to more severe levels of clinical depression (Coyne, 1994). Second, the majority of past research has utilized adolescent or adult samples. Findings from studies examining the etiology of depression in adolescents and adults cannot automatically be extended to children. Rather, age-related differences in cognition, emotion, and behavior must be taken into account, and the theories must be tested using child samples. Last, few studies have examined the factors that moderate the relation between insecure attachment and depression. Clearly not all individuals who exhibit insecure attachment develop depression. Thus, it is important to examine the factors that might enhance the likelihood of developing depression among insecurely attached individuals.

The first goal of this study was to examine whether insecure attachment to parents serves as a risk factor for depression, both in symptom severity and clinical episodes, in children. It is worth noting that the latent structure of depression has been found to be dimensional among youth (Hankin, Fraley, Lahey, & Waldman, in press), indicating that there is continuity between depressive symptoms and disorder (Flett, Vredenburg, & Krames, 1997). Consequently, we focused primarily on severity of depressive symptoms, as assessed by both youth self-report questionnaire and number of symptoms met in a diagnostic interview. At the same time, given past debate regarding the continuity of depression (Coyne, 1994), we also assessed depression in terms of a diagnosis of a depressive episode. To test whether insecure attachment predicts depression, we utilized a retrospective design. As outlined by Alloy et al. (2000), the logic of such a design is based on two assumptions. First, children who exhibit the hypothesized vulnerability factor to depression (i.e., an insecure attachment style) developed this factor sometime in the past, thereby increasing their risk for depression whenever this factor was present. Consistent with this argument, attachment styles have been found to exhibit stability throughout childhood and adolescence (e.g., Ainsworth et al., 1978; Crowell, Fraley, & Shaver, 1999). A meta-analytic review of the

consistency of attachment styles showed relative stability over the first 19 years of life with stronger stability in childhood (Fraley, 2002). Second, given that a past history of childhood depression is one of the best predictors of future elevations in depression (e.g., Harrington, Rutter, & Fombonne, 1996), finding an association between increased rate of past depression and the hypothesized vulnerability factor (i.e., insecure attachment style) in children not currently experiencing elevated depression provides support for the vulnerability status of this factor.

The second goal was to examine whether the relation between insecure attachment and depression in children is moderated by excessive reassurance seeking. Excessive reassurance seeking is defined as "a relatively stable tendency to excessively and persistently seek assurances from others that one is loveable and worthy, regardless of whether such assurance has already been provided" (Joiner, Metalsky, Katz, & Beach, 1999, p. 270). According to Coyne's (1976) interactional theory, depressed individuals perpetuate a cycle of negative interpersonal exchanges that triggers increases in their depressive symptoms. Applying Coyne's model to understanding the etiology of depression in children, we would predict the following: A mildly depressed child seeks reassurance from parents. Parents initially respond with genuine concern and support. The child, however, perceives this initial support as inadequate and consequently escalates symptoms in an attempt to secure more reassurance. Although parents continue to provide support, they begin to experience feelings of irritation and guilt, leading to a separation between the content and affective quality of their reassuring statements. This discrepancy increases the child's fear of rejection, which in turn leads to a further escalation of symptoms to restore the feeling of security.

Research with adults has supported the interactional model of depression (Coyne, 1976). For example, individuals with high levels of reassurance seeking exhibit higher levels of depressive symptoms than individuals with low levels of reassurance seeking (e.g., Joiner, Alfano, & Metalsky, 1992; Joiner & Metalsky, 1995). In addition, excessive reassurance seeking predicts increases in depression over time both on its own and in interaction with negative events (e.g., Davilla, 2001; Joiner & Metalsky, 2001; Joiner & Schmidt, 1998). Far less research has examined the relation between excessive reassurance seeking and depressive symptoms in children. The only available studies, to date, have shown that higher levels of reassurance seeking were associated with elevated levels of depressive symptoms (Joiner, 1999) and a diagnosis of a depressive, but not externalizing, disorder (Joiner, Metalsky, Gencoz, & Gencoz, 2001). Both of these studies were conducted with youth in-patient psychiatric samples, and, although providing preliminary support for children,

exclusive use of in-patient samples may be a limitation because of both the lack of generalizability to community samples and the greater depressive severity and comorbidity levels (Newman, Moffitt, Caspi, & Silva, 1998).

Given that children who exhibit high levels of reassurance seeking are likely to seek confirmations of their value and worth from key attachment figures such as their parents, we hypothesized that children who exhibit a combination of excessive reassurance seeking and insecure attachment would be particularly vulnerable to developing depression. In other words, we posited that the interaction of excessive reassurance seeking with an insecure attachment style would be associated with depression. From the perspective of Coyne's (1976) interactional model of depression, this hypothesis follows from the following line of reasoning: Children who are insecurely attached to their caregivers and who consistently seek reassurance from these caregivers will be particularly likely to have their requests for reassurance not met as a result of their developmental history of unresponsive caregiving. Thus, although the extant literature shows that both insecure attachment and reassurance seeking are independent predictors of depression, we hypothesized that the interaction of these two independent risk factors would be a particularly potent risk for depression.

To test our hypothesis that the interaction of insecure attachment with excessive reassurance seeking would be associated with (a) higher levels of current depressive symptoms and (b) a past history and greater severity of clinically significant depression, even after controlling for current depressive symptoms, we assessed attachment, reassurance seeking, and depression (both symptoms and episodes) in a high-risk sample of 140 children (ages 6 to 14) of depressed parents. We believe it is particularly interesting and advantageous to examine this hypothesis in a high-risk sample for several reasons. First, offspring of depressed parents are at increased risk for developing depression (Goodman & Gotlib, 2002). Thus, the use of a high-risk design maximizes the number of children who have experienced a past history of clinically significant depression, thereby increasing power to predict depression in a sample of younger children expected to exhibit a relatively low incidence of depression (i.e., less than 3% of the general population under 15 years of age; Hankin et al., 1998). Second, offspring of depressed parents may be particularly likely to exhibit insecure attachment and excessive reassurance seeking. Many studies have shown that children of depressed parents are more likely to have an insecure attachment than other children, and, although the evidence is not entirely consistent, this association seems generally stronger when investigated among children whose parents show clinical levels of depression (Lyons-Ruth, Lyubchik, Wolfe, & Bronfman, 2002). Parents' depres-

sion may contribute to youths' insecure attachment and excessive reassurance seeking through various mechanisms (see Goodman & Gotlib, 1999, 2002, for theoretical and empirical reviews), although the precise processes are not known. It may be that the child develops a more insecure attachment because the depressed parent is less emotionally and physically available. Also, the child may display more excessive reassurance seeking because the depressed parent is less responsive and available to provide adequate reassurance. The available research shows that parents' relational difficulties predict their children's relational problems, and this transaction increases the risk for both the child's depression and his or her insecure attachment (Lyons-Ruth et al., 2002). Depressed parents have been found to display less optimal caregiving behaviors and to engage in fewer positive interactions and more negative interchanges with the child; these problematic parenting behaviors persist even after depression remission (Lyons-Ruth et al., 2002). Children of depressed mothers are less responsive and active, show flattened affect, exhibit elevated emotionality in the face of conflict and distress, and display less positive and more negative affect in interactions with parents (Goodman & Gotlib, 1999). Thus, the evidence is consistent with the view that children of depressed parents are more likely to be insecurely attached and display excessive reassurance seeking.

Method

Participants

Participants were recruited in two phases. In the first phase, participants were recruited through ads placed in local newspapers as well as through posters placed throughout the greater Montreal area. All ads and posters were in English and specifically advertised for parents with a history of depressive episodes. One hundred ninety-five people responded to these ads. Respondents were invited to participate in a telephone interview during which a diagnostician administered the affective disorders module of the Structured Clinical Interview for the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed. [DSM-IV]; American Psychiatric Association, 1984) Axis I (SCID-I; First, Gibbon, Spitzer, & Williams, 1995). One hundred seventeen parents met criteria for either a current or past major depressive episode and were invited to participate in the study. Eighty-six parents, with 122 children in the appropriate age range, decided to participate.

In the second phase, diagnosticians called the parents of children who participated in a previous study in our lab and invited them to participate in this study. The only selection criterion for the past study was having a child between the ages of 7 and 13. All 55 parents

agreed to complete the telephone interview. Sixteen of these parents met criteria for either a current or past major depressive episode and were invited to participate in the study. All 16 parents, with 18 children in the appropriate age range, decided to participate.

The final sample consisted of 140 children (69 boys and 71 girls) and one of their parents (88 mothers and 14 fathers). In all cases, the participating parent was the parent who had completed the phone interview and met criteria for either a current or past major depressive episode. Children's ages ranged from 6 to 14 ($M = 9.8$, $SD = 2.3$, median = 10). Parents' ages ranged from 27 to 53 ($M = 40.3$, $SD = 6.4$, median = 41). The sample was 84.3% White ($n = 118$), 4.9% Asian ($n = 7$), 2.9% Hispanic ($n = 4$), 1.9% African American ($n = 1$), 1.1% Native American ($n = 1$), and 4.9% of other descent ($n = 7$). The mother tongue of participants included English (68.7%; $n = 70$), French (9.8%; $n = 10$), Spanish (2.9%; $n = 3$), and other languages (18.6%; $n = 19$; e.g., German, $n = 3$, and Portuguese, $n = 3$). Importantly, all parents reported that they and their child were fluent in English. Of the parents, 14.7% were single ($n = 21$), 43.1% were married ($n = 60$), 9.8% were separated ($n = 14$), 27.5% were divorced ($n = 38$), 1.0% was widowed ($n = 1$), and 3.9% were none of the above ($n = 6$). The median family income ranged from \$30,000 to \$45,000. Of the children, 34 met criteria for a current (6%; $n = 8$) or past (21%; $n = 26$) affective disorder, and 106 had no history of affective disorders.

Procedure

Two research assistants met with one parent-child pair at a time. At the start of the assessment, parents completed consent and demographics forms. The children were told that their participation was voluntary and they could choose not to participate. All children decided to participate in the study. For the first half of the assessment, a research assistant read each questionnaire aloud in English to the child while the child followed along and responded to questions using his or her own copy. During this time, a diagnostician obtained information regarding the children's current and past depressive symptoms from the parent using the Schedule for Affective Disorders and Schizophrenia for School-Age Children, Present Version (K-SADS; Kaufman, Birmaher, Brent, Rao, & Ryan, 1996). In the second half of the assessment, a diagnostician obtained information regarding the child's current and past depressive symptoms from the child using the K-SADS. Families were compensated for their time at the rate of \$60.

Diagnostic interviewers completed an intensive training program for administering the K-SADS and SCID-I interviews and for assigning *DSM-IV* and RDC diagnoses. The training program consisted of attending approximately 80 hr of didactic instruction,

listening to audiotaped interviews, conducting practice interviews, and passing regular exams (85% or above). The principal investigator held weekly supervision sessions for the interviewers. The principal investigator also reviewed interviewers' notes and tapes to confirm the presence or absence of a diagnosis. Discrepancies were resolved through consensus meetings and best-estimate procedures.

Measures

SCID-I (First et al., 1995). The SCID-I is a semistructured clinical interview designed to arrive at current and lifetime *DSM-IV* diagnoses. We employed the mood disorder module and the psychotic screen for the *DSM-IV* to allow for the diagnosis of current and past history of *DSM-IV* mood disorders among the parents. The psychotic screen was used to exclude any parents with current or past psychotic disorders. Two parents were excluded as a result of having experienced a past psychotic disorder. The SCID-I has been shown to yield reliable diagnoses of depressive disorders (Zanarini et al., 2000) and is frequently used in clinical studies of depression in adults.

K-SADS (Kaufman et al., 1996). The K-SADS is a semistructured clinical interview designed to arrive at *DSM-IV* and RDC diagnoses. The K-SADS is administered separately to the child and the parent. A summary diagnosis is based on both sets of information. The K-SADS yields reliable diagnoses of depressive disorders (Chambers et al., 1985) and is used frequently in studies of depression in children. We assessed both current and past history of clinically significant depressive episodes. Dichotomous scores, based on *DSM-IV* depression diagnostic criteria, indicate the presence (coded 1) or absence (coded 0) of current or past depressive episodes. In addition, we utilized the K-SADS to assess severity of both current and past peak levels of depressive symptoms. Severity scores range from 0 (*no symptoms*) to 9 (*all depressive symptoms*) and indicate the number of *DSM-IV* depressive symptom criteria met.

Child Depression Inventory (CDI; Kovacs, 1992). The CDI is a 27-item self-report questionnaire that measures the cognitive, affective, and behavioral symptoms of depression. For each item, children were asked whether it described how they were thinking and feeling in the past week. Items are scored from 0 to 2, with higher score indicating greater symptom severity. Total CDI scores range from 0 to 52. The CDI is reliable, valid, and can distinguish children with major depressive disorders from nondepressed children (Kovacs, 1992). Coefficient alpha was .84 in this study.

Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987). The IPPA is an 18-item self-report questionnaire that assesses positive and negative cognitive–affective dimensions (e.g., “internal working models”) of children’s relationships with their parents and close friends. Children rate items focusing on how well these attachment figures serve as sources of psychological security using a 5-point Likert-scale. Sample items include “I can count on my parents when I need to get something off my chest”; “My parents trust my judgment”; “My parents don’t understand what I’m going through these days.” We used the 12 items assessing attachment to parents. The total score is equal to the sum of all items, and higher scores indicate higher levels of insecure attachment.

Research utilizing the IPPA with adolescent (ages 10 to 20) samples shows the IPPA is internally consistent and has strong test–retest reliability and good validity (Armsden & Greenberg, 1987, 1988; Crowell et al., 1999). Although far less research has utilized the IPPA with children (i.e., 6 to 10), preliminary data support the reliability and validity of IPPA scores in this age group. For example, IPPA scores possess moderate internal consistency and test–retest reliability over a 1-year interval ($r = .63$; Abela, Adams, & Hankin, 2003) in younger children. In addition, higher scores on the parental attachment subscale have been found to be associated with lower scores on the warmth, responsiveness, and consistency subscales of the Parenting Dimensions Inventory (Abela et al., 2003) in both younger and older children. In this study, coefficient alpha was .78.

The Reassurance-Seeking Scale for Children (RSSC; Joiner & Metalsky, 1995). The RSSC is a modified version of the Reassurance-Seeking Scale (Joiner & Metalsky, 1995), which was reworded for use with children. The revised scale consists of four statements (e.g., “I always need to ask my parents and friends if they like me”; “I always need to ask my parents and friends if they really care about me”; “Sometimes when I ask people if they like me, they tell me to stop asking”; “Sometimes when I ask people if they like me, they get mad”). Children rate each statement on a 3-point scale. Total scores range from 0 to 8, with higher scores corresponding to higher levels of reassurance seeking. RSSC scores exhibit moderate to high levels of reliability (Joiner, 1999; Joiner et al., 2001). Regarding validity, in line with Coyne’s (1976) theory, higher RSSC scores have been found to be associated with higher levels of both interpersonal rejection (Joiner et al., 2001) and dependency (Abela et al., 2003). Regarding reliability, RSSC scores have been found to be relatively stable in children (ages 6 to 14) over a 1-year period ($r_s = .61$; Abela et al., 2003). In this study, coefficient alpha was .78.

Results

Examining Nonindependence in Data

Given that 38 pairs of siblings participated in this study, we conducted preliminary analyses examining whether nonindependence in our data impacted our findings. To do so, we first ran all analyses including only (a) the 64 children who did not have a sibling participating in this study and (b) the first child from each sibling pair to complete the assessment ($n = 38$). Next, we ran all analyses including only (a) the 64 children who did not have a sibling participating in this study and (b) the second child from each sibling pair to complete the assessment ($n = 38$). Last, we ran all analyses including all 140 children.¹ The direction and magnitude of effects were similar in all three sets of analyses, suggesting that the inclusion of siblings in this study did not have a significant impact on the pattern of findings obtained. In addition, all significant relations reported were also obtained excluding either the first or second sibling. Thus, we used the entire sample ($n = 140$) for the analyses presented next.

Regression Analyses: Current Level of Depressive Symptoms

Table 1 shows descriptive statistics and associations (Pearson correlations) for measures.

To examine whether the interaction of excessive reassurance seeking with insecure attachment was associated with children’s self-reported current level of depressive symptoms (CDI), we conducted hierarchical multiple regression analyses.² First, main effect variables (i.e., RSSC and IPPA) were entered into the equation. Second, the RSSC \times IPPA interaction was entered.³ Results pertaining to children’s self report (CDI) of current level of depressive symptoms are presented in the top panel of Table 2. Higher RSSC scores were associated with higher levels of depressive symptoms after controlling for IPPA scores, and higher IPPA scores were associated with higher levels of de-

¹Details on these specific analyses are available from the first author.

²In addition to the moderational model we present in the text, we also explored a mediational model in which youths’ insecure attachment would be associated with excessive reassurance seeking, which, in turn, would be related to depression. However, this mediational model was not supported because excessive reassurance seeking was not associated significantly with insecure attachment (see Table 1). Additional details on the specific mediational analyses are available from the first author.

³Given findings showing age and gender effects with depression (Hankin & Abramson, 2001), we conducted exploratory analyses including age and gender in the regressions as main effects and moderators. None of the age or gender interactions was significant at each step as they were entered, nor in the final step, in the hierarchical regression. Therefore, for the sake of simplicity, results are presented for the entire sample.

Table 1. Means, Standard Deviations, and Intercorrelations Among All Measures

	1	2	3	4	5	6	7	8	9	10	11
1. Children's Depression Inventory	—										
2. K-SADS-Current Diagnosis	.39***	—									
3. K-SADS-Current Severity	.44***	.85***	—								
4. K-SADS-Past Diagnosis	.14	.18*	.08	—							
5. K-SADS-Past Severity	.14	.06	.04	.87***	—						
6. Reassurance Seeking Scale for Children	.31***	.31***	.27**	.21*	.16	—					
7. Inventory for Parent and Peer Attachment	.45***	.29***	.27**	.08	.01	.08	—				
8. Beck Depression Inventory	.23**	.27**	.24**	.06	.07	.08	.17	—			
9. SCID-Current Severity	.14	.31***	.29**	.06	.07	.08	.19*	.62***	—		
10. Child's Age	.08	-.05	-.05	.15	.15	-.45***	.11	.01	-.09	—	
11. Child's Gender	-.06	.12	.06	.04	.00	.15	.03	.07	.18*	-.13	—
<i>M</i>	10.09	.06	.19	.21	.94	1.52	27.82	19.16	2.61	9.80	.51
<i>SD</i>	6.76	.23	.92	.41	2.11	2.11	8.38	12.41	3.41	2.37	.50

Note: K-SADS = Schedule for Affected Disorders and Schizophrenia; SCID = Structural Clinical Interview for the DSM-IV. ****p* < .001. ***p* < .01. **p* < .05.

Table 2. Reassurance Seeking and Insecure Attachment Predicting Current Level of Depressive Symptoms

Order of Entry	Predictors	Cumulative <i>R</i> ²	F for Increment in <i>R</i> ²	<i>df</i>	<i>t</i> for Within-Set Predictors	Standardized β Coefficient
Children's Self Report (CDI)						
1.	Main Effect Variables	.29	27.01***	2,131		
	RSSC			131	4.01***	.30
	IPPA			131	5.79***	.43
2.	RSSC × IPPA	.36	14.17***	1,130		.28
Diagnosticians' Ratings (K-SADS-C-SEV)						
1.	BDI	.06	7.63**	1,128		.24
2.	Main Effect Variables	.17	8.82***	2,126		
	RSSC			126	3.02**	.25
	IPPA			126	2.69**	.22
3.	RSSC × IPPA	.30	21.83***	1,125		.37

Note: CDI = Children's Depression Inventory; RSSC = Reassurance Seeking Scale for Children; IPPA = Inventory for Parent and Peer Attachment, Parent subscale; K-SADS-C-SEV = Schedule for Affective Disorders and Schizophrenia for School-Age Children, Current Severity of Symptoms; BDI = Beck Depression Inventory. ****p* < .001. ***p* < .01. **p* < .05.

pressive symptoms after controlling for RSSC scores. Further, in line with hypotheses, the RSSC × IPPA interaction was associated with depressive symptoms.

To examine the form of the RSSC × IPPA interaction, predicted CDI scores were calculated by inserting specific values for RSSC and IPPA scores (i.e., 1 *SD* above and below this sample's mean) into the regression equation summarized in the top of Table 2 (see Cohen & Cohen, 1983, pp. 323, 419 for further details). Low levels of depression were found among (a) children who exhibited low levels of both reassurance seeking and insecure attachment (CDI = 7.01), (b) children who exhibited high levels of reassurance seeking

but low levels of insecure attachment (CDI = 5.88), and (c) children who exhibited high levels of insecure attachment but low levels of reassurance seeking (CDI = 9.68). Children who exhibited high levels of both reassurance seeking and insecure attachment reported the highest level of depressive symptoms (CDI = 17.04).

Similar regression analyses were conducted to examine whether the interaction of excessive reassurance seeking with insecure attachment was associated with diagnosticians' ratings (K-SADS-C-SEV) of children's current level of depressive symptoms. As the K-SADS relies, in part, on parental report, BDI scores were entered into the model first to control for the po-

tential impact of parents' current levels of depressive symptoms on their reporting of their child's current level of depressive symptoms. Second, main effect variables (i.e., RSSC and IPPA) were entered into the equation. Last, the RSSC \times IPPA interaction was entered.³ Results pertaining to diagnosticians' ratings (K-SADS-C-SEV) of children's current level of depressive symptoms are presented in the bottom panel of Table 2. Higher RSSC scores were associated with higher K-SADS-C-SEV scores after controlling for IPPA scores, and higher IPPA scores were associated with higher K-SADS-C-SEV scores after controlling for RSSC scores. Last, in line with hypotheses, the RSSC \times IPPA interaction was associated with higher K-SADS-C-SEV scores.

To examine the form of the RSSC \times IPPA interaction, K-SADS-C-SEV scores were calculated by inserting specific values for RSSC and IPPA scores (i.e., 1 *SD* above and below this sample's mean) into the regression equation summarized in the bottom of Table 2. Relatively low levels of depressive symptoms (i.e., <2 depressive symptoms on the K-SADS-C) were seen among (a) children who exhibited low levels of both reassurance seeking and insecure attachment (K-SADS-C-SEV = 0.97), (b) children who exhibited high levels of reassurance seeking but low levels of insecure attachment (K-SADS-C-SEV = 0.17), and (c) children who exhibited high levels of insecure attachment but low levels of reassurance seeking (K-SADS-C-SEV = 0.62). Children who exhibited high levels of both reassurance seeking and insecure attachment exhibited the highest levels of depressive symptoms (K-SADS-C-SEV = 2.22).

Regression Analyses: Past History of Depressive Episodes

Logistic regression analyses were conducted to examine whether the interaction of excessive reassurance seeking with insecure attachment was associated with a past history of depressive episodes. The dependent variable was whether the child had a past history of depressive episodes (coded 1 for presence of past depressive episode(s) and 0 for none). We first entered current levels of both parents' and children's depressive symptoms to control for the potential impact of current depressive symptoms on the recall of past depressive episodes. To further control for current levels of depression, children who met diagnostic criteria for a

current depressive episode were removed from the sample ($n = 8$). Second, main effect variables were entered (i.e., IPPA and RSSC scores). Last, we entered the IPPA \times RSSC interaction.³ Results pertaining to a past history of depressive episodes are presented at the top of Table 3. Neither excessive reassurance seeking nor insecure attachment was associated with a past history of depressive episodes after controlling for current depressive symptoms and the other predictor. Consistent with hypotheses, the interaction of insecure attachment and excessive reassurance was associated with a past history of depressive episodes after controlling for current depressive symptoms.

To examine the form of this interaction, probabilities of having experienced a past depressive episode were calculated by inserting specific values for RSSC and IPPA scores (i.e., 1 *SD* above and below this sample's mean) into the regression equation summarized in the top of Table 3 (see Kleinbaum, 1994, p. 8 for further details). Low probabilities of having experienced a past depressive episode were obtained for (a) children who exhibited low levels of both reassurance seeking and insecure attachment (probability = 6.8%), (b) children who exhibited high levels of reassurance seeking but low levels of insecure attachment (probability = 5.6%), and (c) children who exhibited high levels of insecure attachment but low levels of reassurance seeking (probability = 5.6%). Children who exhibited high levels of both reassurance seeking and insecure attachment showed the highest probability of experiencing a past depressive episode (probability = 57.8%).

Regression Analyses: Past Severity of Depressive Episodes

To examine whether the interaction of excessive reassurance seeking with insecure attachment was associated with diagnosticians' ratings (K-SADS-P-SEV) of the severity children's past depressive episodes, we conducted hierarchical multiple regression analyses. Again, both parents' and children's depressive symptoms were first entered into the regression equation. In addition, children who met diagnostic criteria for a current depressive episode were removed from the sample ($n = 8$). Second, main effect variables (i.e., RSSC and IPPA) were entered into the equation. Last, the RSSC \times IPPA interaction was entered.³ Results pertaining to diagnosticians' ratings (K-SADS-P-SEV) of the severity children's past depressive episodes are presented in the bottom panel of Table 3. The main effect set was not a significant predictor of K-SADS-P-SEV scores. At the same time, in line with hypotheses, the RSSC \times IPPA interaction was associated with higher K-SADS-P-SEV scores.

To examine the form of the RSSC \times IPPA interaction, K-SADS-P-SEV scores were calculated by inserting specific values for RSSC and IPPA scores (i.e.,

³Given findings showing age and gender effects with depression (Hankin & Abramson, 2001), we conducted exploratory analyses including age and gender in the regressions as main effects and moderators. None of the age or gender interactions was significant at each step as they were entered, nor in the final step, in the hierarchical regression. Therefore, for the sake of simplicity, results are presented for the entire sample.

Table 3. *Reassurance Seeking and Insecure Attachment Predicting Past History of Depressive Symptoms*

Logistic Regression Analyses: Likelihood of Experiencing Past Depressive Episode (K-SADS-P-DX)					
Order of Entry	Predictors	Odds Ratio	95% CI for Odds Ratio		Wald
			Lower	Upper	
1.	CDI	1.05	0.98	1.13	1.92
	BDI	1.00	0.97	1.04	0.02
2.	RSSC	1.40	0.87	2.24	1.94
	IPPA	1.01	.60	1.69	0.00
3.	RSSC × IPPA	3.24	1.24	8.48	5.72*

Hierarchical Multiple Regression Analyses: Severity of Past Depressive Episode (K-SADS-P-SEV)						
Order of Entry	Predictors	Cumulative R ²	F for Increment in R ²	df	t for Within-Set Predictors	Standardized β Coefficient
1.	Control Variables	.02	1.08	2,118	1.32	
				118		.12
2.	BDI			118	0.42	.04
	Main Effect Variables	.04	1.28	2,116		
	RSSC			116	1.16	.11
	IPPA			116	-1.01	-.10
3.	RSSC × IPPA	.10	7.14**	1,115		.28

Note: CI = confidence interval; CDI = Children’s Depression Inventory; BDI = Beck Depression Inventory; RSSC = Reassurance Seeking Scale for Children; IPPA = Inventory for Parent and Peer Attachment, Parent subscale; K-SADS = Schedule for Affective Disorders and Schizophrenia for School-Age Children; P-DX = Past Diagnosis; P-SEV = Severity of Past Episode.
 p* < .05. *p* < .01. ****p* < .001.

1 *SD* above and below the sample mean) into the regression equation shown in the bottom of Table 3. Three of the four groups of children exhibited low levels of depressive symptoms (i.e., K-SADS-P-SEV < 2): (a) children who exhibited low levels of both reassurance seeking and insecure attachment (K-SADS-P-SEV = 1.29), (b) children who exhibited high levels of reassurance seeking but low levels of insecure attachment (K-SADS-P-SEV = 0.52), and (c) children who exhibited high levels of insecure attachment but low levels of reassurance seeking (K-SADS-P-SEV = 0.19). Children who exhibited high levels of both reassurance seeking and insecure attachment showed the highest levels of depressive symptoms (K-SADS-P-SEV = 2.28).

Discussion

The results of this study provide support for our hypothesis that the interaction of insecure attachment to parents and excessive reassurance seeking would be associated with both current depressive symptoms and past history or severity of depressive episodes. Such findings suggest that children who both engage in excessive reassurance seeking and exhibit insecure attachment may be particularly likely to develop depressive symptoms. Thus, the results of this study highlight the potential importance of integrating Bowlby’s (1969) attachment theory with Coyne’s (1976) interactional model to foster a more thorough understand-

ing of the role of interpersonal factors in the etiology of depression in children.

It is important to note, however, that because this study utilized a retrospective design, it is not possible to ascertain with certainty whether the increased lifetime prevalence of depression among children exhibiting high levels of both insecure attachment and excessive reassurance seeking is due to these interpersonal vulnerability factors contributing to the cause of past depression or to past depression leading to the development of these vulnerability factors as a consequence or a “scar” (Rhode, Lewinsohn, & Seeley, 1990) of the earlier episode. Considering the early development and relatively stability of attachment styles (e.g., Ainsworth et al., 1978; Fraley, 2002), however, there is adequate reason to suspect that insecure attachment, as a vulnerability factor, existed prior to depression elevations. At the same time, given that it is unknown how stable reassurance seeking is over the lifespan, particularly among youth, caution is needed when interpreting these retrospective results. Given the uncertain stability of excessive reassurance seeking in childhood, it may be that an insecure attachment (or other depression vulnerability) contributes to decreases in self-esteem or increases in negative life events (see Hankin et al., 2003, for evidence) that subsequently predict excessive reassurance seeking (Joiner et al., 1999). Furthermore, our results show that excessive reassurance seeking declines over time with age. This appears consistent with the perspective that excessive reassurance seeking may be relatively more developmentally typi-

cal earlier in childhood, but continuing to exhibit high excessive reassurance seeking that is not normative may represent more of an emerging depression vulnerability. Thus, it is imperative that future research examine these issues longitudinally to ascertain more precisely whether insecure attachment interacts with reassurance seeking to predict the development of depression.

Future research is likely to benefit from examining the factors that mediate the relation between the interaction of these interpersonal vulnerability factors (e.g., insecure attachment and excessive reassurance seeking) and depression in children. Cognitive factors have been investigated as one mediator of this relation in adults. For example, Ingram and Ritter (2000) found that insecurely attached individuals are more likely than securely attached individuals to attend to negative stimuli following a negative mood-induction procedure. In addition, prospective naturalistic studies have shown that insecure attachment style leads to higher levels of dysfunctional attitudes, which in turn contributes to lower self-esteem, which consequently predicts future depressive symptoms (Hankin et al., in press; Roberts, Gotlib, & Kassel, 1996). Thus, preliminary data provide support for the hypothesis that cognitive factors mediate the relation between insecure attachment and depression in adults. To our knowledge, however, no research has examined this mediational component of attachment theory in younger populations.

This study advances research on the relation between insecure attachment and depression for several reasons. First, most past research has examined whether insecure attachment is a correlate of current depressive symptoms. This study expanded on such research by showing that insecure attachment was associated with a past history of depressive episodes even after controlling for current level of depressive symptoms. Second, most past research has examined the relation between insecure attachment and depressive symptoms. This study expands our present knowledge base by showing that insecure attachment is not only related to severity of current depressive symptoms but also to the past occurrence of clinically significant depressive episodes. Third, the study utilized a multi-informant, multimethod design. Both the parent and child were interviewed to arrive at the child's depression diagnosis. Self-report measures and diagnostic interviews of children's depression were used, so results were not limited to only one method (questionnaire or interview). Last, this study is the first to examine whether excessive reassurance seeking moderates the relation between insecure attachment and depression.

At the same time, we note several limitations. First, this study used a retrospective design. Although such a design improves on simple cross-sectional research, it still does not allow us to determine temporal precedence or causality. Thus, it is imperative that future re-

search examine prospectively whether insecure attachment interacts with reassurance seeking to predict the development of depression. Second, this study utilized self-report measures to assess both insecure attachment and excessive reassurance seeking. Although both the IPPA and the RSSC exhibit high degrees of reliability and validity, future research should assess these constructs through other techniques (e.g., observation). Third, this study utilized a high-risk design. Although this design allows for a strong test of vulnerability theories of depression by maximizing the number of children who have experienced a depressive episode (because parental depression is a strong risk for child depression; Goodman & Gotlib, 2002), results cannot be generalized to other populations. Future research should examine whether the interaction of insecure attachment with excessive reassurance seeking is associated with depression in a community sample of children. Fourth, this study examined only the relations among insecure attachment, excessive reassurance seeking, and depression. Because we did not assess nondepressive symptoms or disorders, we were unable to identify whether the combination of these vulnerability factors is specific to depressive disorders rather than broadly applicable to other disorders. Future research should assess a broader range of symptoms (e.g., anxiety) to investigate affective symptom specificity of these etiological factors. In research with adults, insecure attachment has been found to predict both symptoms of depression and anxiety (e.g., Hankin et al., in press), although a cognitive risk factor pathway was found to mediate specifically the association between insecure attachment and later depressive symptoms, whereas an interpersonal stress generation mechanism mediated the link between insecure attachment and both anxiety and depressive symptoms. Research indicates that excessive reassurance seeking predicts depression specifically (Joiner & Metalsky, 2001).

In sum, the results of this study show that insecure attachment to parents is related to depression in children, and excessive reassurance seeking moderates this relation. This interaction of insecure attachment to parents with excessive reassurance seeking is associated with severity of current and past depressive symptoms as well as increased likelihood of having experienced past clinically significant depressive episodes. Understanding how such interpersonal factors influence the etiology of depression may improve identification of and enhance prevention efforts for children at risk of experiencing depression.

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