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Insecure Attachment, Dysfunctional Attitudes, and Low Self-Esteem Predicting Prospective Symptoms of Depression and Anxiety During Adolescence

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This study extends the existing adult literature on insecure attachment as a predictor of depression and anxiety by examining these pathways in a sample of adolescents. In addition, dysfunctional attitudes and low self-esteem were tested as mediators of the association between insecure attachment and symptoms of depression and anxiety. Youth ($N = 350$; 6th–10th graders) completed self-report measures of attachment, dysfunctional attitudes, self-esteem, and symptoms of depression and anxiety in a 4-wave prospective study. Results indicate that anxious and avoidant attachment each predicted changes in both depression and anxiety (after controlling for initial symptom levels). The association between anxious attachment, but not avoidant attachment, and later internalizing symptoms was mediated by dysfunctional attitudes and low self-esteem. Effects remained even after controlling for initial co-occurring symptoms.

Depression and anxiety are among the most common psychiatric disorders during adolescence (Costello, Egger, & Angold, 2005; Williamson, Forbes, Dahl, & Ryan, 2005), and prevalence rates of both major depressive disorder and anxiety disorders increase significantly during adolescence (Costello et al., 2005; Hankin & Abramson, 2001). Point prevalence rates for depression range from 2% to 5%, and rates of recurrence are found to be approximately 70% within 5 years (Birmaher et al., 1996). Anxiety disorders have a point prevalence rate of approximately 20% and exhibit a significant degree of stability across the lifespan (Costello et al., 2005). In addition, adolescent depression and anxiety disorders co-occur highly with each other (Angold, Costello, & Erkanli, 1999), as well as with other psychiatric disorders. Given the high prevalence and recurrence rates, marked increase during adolescence, significant degree of co-occurrence, and continuity into adulthood, it is important to understand the mechanisms involved in the development of depression and anxiety in adolescents.

Attempts to understand the development of depression in youth have utilized both cognitive and interpersonal approaches. Separately, each approach has contributed substantially to our understanding of the development of depression. Cognitive theories (e.g., Beck's Cognitive Theory of Depression; Beck, 1987) have provided evidence for the influence of negative cognitions in the development of depression, whereas interpersonal theories (e.g., Interactional Theory of Depression; Coyne, 1976) emphasize the role of interpersonal processes (e.g., relationships with family and peers) in depression. Using an integrated cognitive-interpersonal approach allows for an examination of the interplay between both intrapersonal and interpersonal factors. Attachment theory is one such integrative theory that can be used as a cognitive-interpersonal framework for understanding the development of depression in youth. The attachment dynamics

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that develop between infant and caregiver can be used to understand the role of cognitions and expectations of others in an interpersonal context. The purpose of our study was to examine whether cognitive factors (i.e., dysfunctional attitudes and self-esteem) differentially mediate the pathways between insecure (i.e., avoidant and anxious) attachment and symptoms of depression versus anxiety during adolescence.

ATTACHMENT THEORY

Bowlby (1980) conceived his theory of attachment as a way to explain human bonding behavior, conceptualizing attachment behaviors, and proximity seeking as evolutionarily advantageous. When the infant experiences fear or danger, the infant seeks proximity to the caregiver who provides safety and comfort. The comfort provided by the caregiver reassures the infant that the caregiver will be responsive in times of distress. The accumulation of interactions and experiences with the caregiver is posited to provide the infant with information that is eventually used to organize an individual's expectations of others and understanding of rules for how the world operates. The attachment that develops within the infant-caregiver relationship is thought to form the basis of future relationship dynamics.

Attachment styles have typically been classified into three types: secure, anxious, and avoidant. These types not only describe an individual's behavioral patterns but also represent the organization of the expectations of others in response to comfort or reassurance seeking. Infants who are securely attached use their caregiver as a secure base while exploring novel surroundings; such infants seek contact with, and are comforted by, caregivers after separation. Infants described as anxious-ambivalent have difficulty using the caregiver as a secure base; these infants seek, then resist, contact with caregivers after separation. Finally, infants with an avoidant attachment style do not exhibit distress upon separation and do not seek contact after the caregiver's return.

Traditional attachment measures (e.g., Hazan & Shaver, 1987) have typically measured attachment based on these three attachment types. However, more recent developments in the area of attachment measurement indicate that attachment is best conceptualized using two dimensions (Mikulincer & Shaver, 2007). In their large-scale factor analysis of all known self-report measures, Brennan, Clark, and Shaver (1998) found that the items on these scales loaded onto two factors: anxiety and avoidance. Individuals described as anxious are characterized by anxiety and fear of rejection, whereas individuals described as avoidant are characterized by discomfort with closeness. Thus, an individual's attachment style can be described as falling along the anxious dimension (low to high anxiety) and along the avoidant dimension (low to high avoidance) in a two-dimensional space. Additional research has indicated that attachment is best measured in continuous, rather than categorical, terms. Taxometric analyses indicate that attachment is more accurately measured on a dimensional scale (Fraley & Spieker, 2003; Fraley & Waller, 1998). Given this current theory and strong evidence supporting this two-dimensional perspective on conceptualizing and assessing attachment, we used anxious and avoidant attachment dimensions to understand insecure attachment as a risk factor for anxiety and depressive symptoms.

Although situational influences and new interpersonal experiences may affect attachment security to varying degrees, evidence suggests that there is a moderate degree of stability of attachment security in relationships over time. A 12-year longitudinal study found that infant attachment style significantly predicted attachment style in adolescence (Hamilton, 2000). A meta-analysis found moderate stability of attachment across the lifespan (weighted $r = .27$ from infancy to 19 years of age; Fraley, 2002). Attachment stability across time is of particular interest because the attachment formed as an infant can play a significant role in an individual's conceptualization of self and others in future relationships during childhood and adolescence, a time when individuals begin to consolidate cognitions and expectations of the world (Kaslow, Adamson, & Collins, 2000).

Insecure Attachment and Psychopathology

Within a developmental psychopathology framework, attachment theory has the potential to explain the development of psychopathology (Davila, Ramsay, Stroud, & Steinberg, 2005; Sroufe, Carlson, Levy, & Egeland, 1999). Insecure attachment does not cause psychopathology directly, but early childhood attachment, family context, and other social experiences may shape a person in such a way that certain developmental pathways are more likely to be followed than others. Data support a significant association between insecure attachment and depressive symptoms in children (Abela et al., 2005), adolescents (Hankin, 2005; Irons & Gilbert, 2005) and adults (Hankin, Kassel, & Abela, 2005; Shaver, Schachner, & Mikulincer, 2005; Wei, Mallinckrodt, Russell, & Abraham, 2004). Further, when using self-report measures, this association with depression has been shown not to be an artifact of current mood state (Haaga et al., 2002). Data also show that insecure attachment is associated with anxiety symptoms in adolescents (Muris & Meesters, 2002; Muris, Meesters, van Melick, & Zwambag, 2001) and adults (Hankin et al., 2005; Safford, Alloy, Crossfield, Morocco, & Wang, 2004). Thus, insecure attachment dimensions may be a vulnerability for later anxiety and depressive symptoms (Davila et al., 2005).

Insecure attachment may also contribute to cognitive vulnerability to depression, specifically, dysfunctional attitudes (Beck, 1987). Attachment dynamics are theorized to shape an individual's schemas and expectations regarding others, as well as affect the cognitive appraisals of interpersonal events. Bowlby (1980) stated that individuals form mental representations that include models of the self and other by interacting with their caregiver and important others. These internal working models are hypothesized to be the framework guiding one's thoughts, feelings, and behaviors in the context of future relationships (Hazan & Shaver, 1994). Examining these working models may inform our understanding of the developmental pathways that lead to symptoms of depression and anxiety, possibly through cognitive vulnerability.

Bowlby's working models, which are hypothesized to form based on the infant–caregiver relationship, are similar to the cognitive vulnerability that Beck proposed in his cognitive theory of depression. Beck (1987) theorized that schemas filter and negatively bias (as schemas relate to depression) incoming information. Dysfunctional attitudes are the cognitive products that are then manifested as a result of these schemas. Many studies have supported dysfunctional attitudes as a predictor of depression among adults (Abramson et al., 2002; Scher, Ingram, & Segal, 2005) and youth (Abela & Hankin, 2007; Lakdawalla, Hankin, & Mermelstein, 2007) as well as a predictor of anxiety among adults (Burns & Spangler, 2001; Hankin, Abramson, Miller, & Haeffel, 2004).

Theory and evidence also find an association between insecure attachment and dysfunctional attitudes. To date, a few studies have found that insecure attachment is associated with dysfunctional attitudes and depression in adults (Hankin et al., 2005; Reinecke & Rogers, 2001; Roberts, Gotlib, & Kassel, 1996; Whisman & McGarvey, 1995). One study (Gamble & Roberts, 2005) found that attachment was associated with low self-esteem, dysfunctional attitudes, and negative attributional style in an adolescent sample. Attachment was examined as a mediator of the association between parenting and cognitive style, but depressive symptoms were not included as an outcome. To our knowledge, no research has investigated insecure attachment, dysfunctional attitudes, and depressive symptoms among adolescents. Given the surge in depression during adolescence, it is important to investigate whether the proposed pathway of cognitive factors mediating the association between insecure attachment and depressive symptoms applies to youth. Regarding anxiety, only one study has examined insecure attachment, dysfunctional attitudes, and anxiety (Hankin et al., 2005), whereas others have found that anxious attachment is associated with anxiety (e.g., Eng, Heimberg, Hart, Schneier, & Liebowitz, 2001) and hypervigilance (Fraley, Niedenthal, Marks, Brumbaugh, & Vicary, 2006).

Dysfunctional attitudes about an individual's sense of self is thought to affect self-esteem, a more proximal and accessible predictor of psychological distress (Kuiper & Olinger, 1986; Roberts et al., 1996). Lowered self-esteem and dysfunctional attitudes have been hypothesized to mediate the association between insecure attachment and later depressive symptoms, and evidence with adults supports this assertion (Hankin et al., 2005; Roberts et al., 1996). Insecure attachment was associated with dysfunctional attitudes, which in turn predicted lower self-esteem, and low self-esteem was related to higher depressive symptoms. To our knowledge, no research has examined this mediational developmental pathway among youth. No such studies examining this pathway in predicting anxiety were found.

Although there is more evidence for this mediational pathway to predict depressive symptoms, theoretically, it is reasonable to assume that pathway may also explain anxiety symptoms, especially as depressive and anxiety symptoms often co-occur. As the majority of the studies that have examined this pathway have focused on depressive symptoms only, this study seeks to include anxiety symptoms as an outcome to examine whether avoidant and anxious attachment differentially predict depressive or anxiety symptoms as they relate to the tripartite model of anxiety and depression (Clark & Watson, 1991).

Rationale and Hypotheses

Our study examined insecure attachment as a predictor of prospective increases in symptoms of depression and anxiety and tested whether dysfunctional attitudes and lowered self-esteem act as a cognitive pathway that mediates the link between insecure attachment and later internalizing symptoms (both depression and anxiety). We explored whether these cognitive factors (dysfunctional attitudes and self-esteem) would mediate the association between attachment and depression, as well as between attachment and anxiety, given the strong co-occurrence between these internalizing symptoms. This study advances the literature, first by extending the knowledge base on the influence of insecure attachment on vulnerability to internalizing symptoms and potential mediational cognitive processes in a sample of adolescents, and second by using a multiwave design that can test these mediational pathways more rigorously than past cross-sectional or two-time-point design research (Cole & Maxwell, 2003).

METHODS

Participants

Participants were adolescents recruited from five Chicago area schools ($N = 350$; 57% female). A total

of 467 students were available in the appropriate grades (6th–10th) and were invited to participate. Parents of 390 youth (83.5%) provided active consent; all 390 youth were willing to participate. Of this group, 356 youth (91% of the 390; 76% of the 467 available students) completed the baseline questionnaire, and the remaining 34 were absent from school and were unable to reschedule. We examined data from 350 adolescents who provided complete data at baseline. The age range was 11 to 17 years ($M = 14.5$, $SD = 1.4$). Approximately 53% participants identified themselves as White, 21% as African American, 13% as Latino, 7% as biracial or multiracial, and 6% as Asian or Pacific Islander. Rates of participation in the study decreased slightly at each follow-up assessment: Time 2 ($N = 303$; 86%), Time 3 ($N = 308$; 88%), and Time 4 ($N = 345$; 98%). Youth who participated at Time 1 but were not present at other time points did not differ significantly on any of the measures from those youth who remained at all time points.

Procedures

Research assistants and graduate students visited classrooms in the schools and briefly described the study to students, and letters describing the study to parents were sent home with the students. Specifically, students and parents were told that this study was about adolescent mood and experiences and would require completion of questionnaires at four different time points. Written consent was required from both students and their parents. Permission to conduct this investigation was provided by the school districts and their Institutional Review Boards, school principals, individual classroom teachers, and the university Institutional Review Board.

Participants completed self-report measures of attachment, dysfunctional attitudes, self-esteem, anxiety symptoms, and depressive symptoms at four time points over a 5-month period, with approximately 5 weeks between each time point. The spacing for the follow-up intervals was chosen based on past research (e.g., Hankin, Abramson, & Siler, 2001) that found cognitive vulnerability predicted prospective depressive symptoms using a 5-week follow-up. In addition, we wanted to understand the prospective dynamics among internalizing symptoms of depression and anxiety over a relatively short time frame with optimal, accurate recall of symptoms (see Costello, Erkanli, & Angold, 2006, for meta-analytic evidence that shorter time frames provide more accurate, less biased findings). Participants were compensated $10 for their participation at each wave in the study, for a possible total of $40 for completing all four waves. Different measures were given at each of the four time points, as described next.

Measures

Experiences in close relationships inventory–Revised (ECR; Brennan et al., 1998). The ECR questionnaire is a self-report measure that assesses insecure attachment—specifically, attachment-related anxiety and avoidance—using 36 items. This two-dimensional perspective for representing attachment relationships is the most empirically supported and theoretically accepted approach presently used for understanding attachment dynamics (Mikulincer & Shaver, 2007). Each item is rated on a 1-to-7 Likert scale. The original measure assesses general attitudes and beliefs regarding adult romantic relationships. The version used in this study was modified to assess adolescent relationships with parents and close friends. Internal consistency in this sample was $\alpha = .84$. The ECR–R was found to have good construct validity (Fairchild & Finney, 2006). Also, the validity of modifying the ECR to assess different important relationships (e.g., friends, parents, romantic partners) has been demonstrated (Fraley et al., 2006). The ECR–R was given at Time 1.

Children's dysfunctional attitudes scale (CDAS; Lewinsohn, Joiner, & Rohde, 2001). The CDAS was modified from the Dysfunctional Attitudes Scale, which was designed to measure the level of dysfunctional attitudes hypothesized by Beck's Cognitive Theory of Depression. The CDAS is composed of nine items, with higher scores indicating more dysfunctional attitudes. Internal consistency in this sample was $\alpha = .70$. Validity of the CDAS was supported by significant associations with clinical depression among youth (Lewinsohn et al., 2001). The CDAS was given at Times 1 and 2.

Self-perception profile for children (SPPC; Harter, 1985). Global self-esteem was assessed by the Self-Perception Profile for Children (SPPC), which is a multidimensional measure of children's perceived competencies in different domains. Six items (1-to-4 Likert scale) were used to assess the general self-worth domain (i.e., overall self-esteem). Internal consistency in this sample was $\alpha = .82$. The SPPC has been shown to have good reliability (internal consistency and test–retest) and good validity (concurrent and convergent; e.g., Harter, 1999; Muris, Meesters, & Fijen, 2003; Winters, Myers, & Proud, 2002). The SPPC was administered at Times 1 and 3.

Children's depression inventory (CDI; Kovacs, 1985). Depressive symptoms were assessed using the CDI, a self-report measure that assesses depressive symptoms in children and adolescents using 27 items. Each item is rated on a scale from 0 to 2, with the total

score ranging from 0 to 54. Reported scores are the average item scores of all items (range = 0–2). Higher scores indicate more depressive symptoms. Internal consistency in this sample was $\alpha = .90$ at Time 1. The CDI has been shown to have good reliability (internal consistency and test–retest) and good validity (Craighead, Curry, & Ilardi, 1995; Klein, Dougherty, & Olino, 2005; Kovacs, 1981; Smucker, Craighead, Craighead, & Green, 1986). The CDI was administered at T1 and T4.

Mood and anxiety symptom questionnaire (MASQ; Watson et al., 1995). The MASQ is a self-report measure used to assess Clark and Watson's (1991) proposed tripartite model and hypothesized symptom groups of depression, anxiety, and general distress. The version used in this study included the Anxious Arousal subscale only (10 items). Each item is rated on a scale from 1 to 5. Reported scores are the average item scores of all items (range = 1–5). Internal consistency in this sample was $\alpha = .86$ at Time 1. Reliability and validity of the MASQ has been demonstrated in research with adolescents (e.g., Hankin, 2008a,b; Hankin, Wetter, Cheely, & Oppenheimer, in press). For example, internal consistencies (αs ranging from .83 to .86) and test–retest reliabilities (rs ranging from .53 to .63 from 1 to 5 months) have been good. Validity (convergent, predictive, discriminant) has been shown in that anxious arousal symptoms, assessed via the MASQ, correlated significantly with other internalizing symptoms, less so with externalizing symptoms, and were predicted by stressful life events (Hankin, 2008a; Hankin et al., in press) and rumination (Hankin, 2008b). The MASQ was administered at T1 and T4.

RESULTS

Preliminary Analyses

Descriptive statistics (means, standard deviations, and correlations) of the main variables are presented in Table 1. All variables were significantly associated (moderate to large effects) with each other in the expected directions. Depressive symptoms (at both T1 and T4), anxiety symptoms, anxious attachment, avoidant attachment, and dysfunctional attitudes were positively correlated with each other and were each negatively correlated with self-esteem.

Path Analyses of Insecure Attachment and Symptoms of Anxiety and Depression

We used structural equation modeling (AMOS 6.0; Arbuckle, 1999) to conduct path analysis. Of particular note for testing the hypothesis that baseline insecure attachment dimensions would predict prospective changes in symptoms over time, we included paths from T1 symptoms to T4 symptoms to create residual change scores and enable prospective examination of whether T1 anxious attachment and T1 avoidant attachment would predict later symptoms of anxiety and depression at T4. Table 2 shows that after controlling for T1 depressive symptoms, T1 anxious attachment and T1 avoidant attachment predicted T4 depressive symptoms; similarly, after controlling for T1 anxiety symptoms, T1 anxious attachment and T1 avoidant attachment predicted T4 anxiety symptoms. Both anxious attachment and avoidant attachment were included in all analyses given their moderate association. Stabilities of anxious and depressive symptoms from T1 to T4 were substantial.

TABLE 1
Means, Standard Deviations, and Correlations Among Central Measures

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
1. CDAS T1										
2. CDAS T2	.27***									
3. CDI T1	.28***	.32***								
4. CDI T4	.18***	.23***	.70***							
5. MASQ T1	.08	.24***	.63***	.56***						
6. MASQ T4	.14**	.18**	.64***	.85***	.56***					
7. AnxAttach T1	.27***	.31***	.57***	.46***	.48***	.41***				
8. AvdAttach T1	.21***	.22***	.51***	.42***	.41***	.38***	.63***			
9. Self-Esteem T1	−.16**	−.26***	−.60***	−.44***	−.53***	−.45***	−.60***	−.44***		
10. Self-Esteem T3	−.15**	−.29***	−.56***	−.57***	−.47***	−.51***	.46***	−.38***	.50***	
M	2.75	2.57	0.47	0.57	2.20	2.22	2.97	3.48	2.91	2.91
SD	0.63	0.55	0.32	0.48	0.75	0.75	1.08	0.94	0.59	0.55

Note. Total sample sizes vary depending on the time interval. Total sample size at Time 1 = 350, Time 2 = 303, Time 3 = 308, and Time 4 = 345. CDAS = Children's Dysfunctional Attitudes Scale; CDI = Child Depression Inventory; MASQ = Mood and Anxiety Symptom Questionnaire, Anxious Arousal subscale; AnxAttach = Experiences in Close Relationships Inventory, Anxious Attachment subscale; AvdAttach = Experiences in Close Relationships Inventory, Avoidant Attachment subscale; Self-Esteem = Self-Perception Profile for Children, Global Self-Worth subscale.
**$p < .01$. ***$p < .001$.

Table 2
Path Analyses Examining Cognitive Factors as Mediators Between Attachment Dimensions and Symptoms of Anxiety and Depression

Parameters	*β*	*β (Controlling for Co-occurring Symptoms)*
Depression Model—No Mediators		
T1 AnxAttach → T4 CDI	.12***	.12***
T1 AvdAttach → T4 CDI	.15***	.15***
T1 CDI → T4 CDI	.64***	.47***
T1 MASQ → T4 CDI	NA	.14***
Depression and Attachment Model—Mediators Included		
T1 AnxAttach → T2 CDAS	.14**	.14*
T1 AvdAttach → T2 CDAS	.02	.02
T2 CDAS → T3 Self-Esteem	−.17**	−.17**
T3 Self-Esteem → T4 CDI	−.26**	−.24**
T1 AnxAttach → T4 CDI	.02	.00
T1 AvdAttach → T4 CDI	.04	.04
T1 CDI → T2 CDAS	.21***	.17**
T1 CDI → T4 CDI	.55***	.48***
T1 Esteem → T2CDAS	−.05	−.05
T1 Esteem → T3 Esteem	.46***	.46***
T1 CDAS → T2 CDAS	.18***	.18***
T1 MASQ → T4 CDI	NA	.14**
Anxiety Model—No Mediators		
T1 AnxAttach → T4 MASQ	.17***	.17***
T1 AvdAttach → T4 MASQ	.18***	.18***
T1 MASQ → T4 MASQ	.50***	.26***
T1 CDI → T4 MASQ	NA	.45***
Anxiety and Attachment Model—Mediators Included		
T1 AnxAttach → T2 CDAS	.15**	.14*
T1 AvdAttach → T2 CDAS	.00	.02
T2 CDAS → T3 Self-Esteem	−.17**	−.17**
T3 Self-Esteem → T4 MASQ	−.28***	−.19**
T1 AnxAttach → T4 MASQ	.05	.02
T1 AvdAttach → T4 MASQ	.10	.04
T1 CDI → T2 CDAS	.10	.17**
T1 MASQ → T4 MASQ	.37***	.23***
T1 Esteem → T2CDAS	−.08	−.05
T1 Esteem → T3 Esteem	.46***	.46***
T1 CDAS → T2 CDAS	.21***	.18***
T1 CDI → T4 MASQ	NA	.40***

Note. $N = 350$.
AnxAttach = anxious attachment style; AvdAttach = avoidant attachment style; CDI = Children's Depression Inventory; MASQ = Anxious Arousal subscale of Mood and Anxiety Symptoms Questionnaire; CDAS = Children's Dysfunctional Attitudes Scale; Self-Esteem = Self-Perception Profile for Child.

Cognitive Factors Mediational Pathway Accounting for the Association Between Attachment and Symptoms of Anxiety and Depression

Based on criteria for testing and establishing mediation (e.g., Baron & Kenny, 1986; Holmbeck, 2002), path analyses were used to examine the hypothesized mediating effects of dysfunctional attitudes and low self-esteem as explaining the longitudinal association between baseline insecure attachment dimensions predicting prospective elevations of depressive and anxiety symptoms. In particular, the following paths are essential for demonstrating mediation and supporting the study's hypothesis: (a) T1 insecure attachment dimensions predict T2 dysfunctional attitudes, (b) T2 dysfunctional attitudes predict T3 lowered self-esteem, (c) T3 self-esteem predicts T4 symptoms, and (d) the effect of T1 insecure attachment dimensions on T4 symptoms is reduced. In addition, we included measures of the mediating constructs at earlier time points to provide a rigorous test of the mediational models and evaluate whether prospective changes in the mediators account for the association between baseline insecure attachment dimensions and later elevations in symptoms (see Cole & Maxwell, 2003). In particular, T1 dysfunctional attitudes, self-esteem, and symptoms were included to predict change to T2 dysfunctional attitudes; T1 esteem was included to predict change to T3 esteem; and T1 symptoms were used to predict prospective changes in T4 symptoms. Finally, it is important to note that we used measures of the hypothesized cognitive mediators at different time points, based on methodological and statistical recommendations (Cole & Maxwell, 2003; Maxwell & Cole, 2007) that longitudinal designs with assessments at different, nonoverlapping time points provide a more stringent and accurate test of mediation than cross-sectional data. Taken together, the strategy of controlling for prior assessments of the mediators and including the mediators at nonoverlapping time points enabled a more accurate longitudinal examination of the proposed mediational pathways. All of the past research examining this cognitive pathway has used a two-time-point study design in which attachment and dysfunctional attitudes were assessed at Time 1 and self-esteem and symptoms were assessed at Time 2. This two-time-point design conflates variables examined in the mediation analysis of constructs at different hypothesized time points and thus does not provide an appropriate, accurate, and unbiased test of the mediation model because the temporal ordering of the variables at different time points necessarily breaks down. As a result, our design should enable a more rigorous test of the hypothesized mediation model than was possible from past research.

Figures 1 and 2, as well as Table 2, summarize the results of the mediation models for depressive and anxiety symptoms, respectively. Both the depression model with mediators, $\chi^2(5) = 50.72$ (comparative fit index [CFI] = .96) and the anxiety model with mediators, $\chi^2(5) = 36.93$ (CFI = .96) fit the data well. The prior analyses demonstrated that T1 attachment dimensions predicted prospective elevations of anxiety and depressive symptoms at T4, so support for mediation can be seen when the indirect mediational paths are significant and the direct paths from insecure attachment to later symptoms are non-significant.

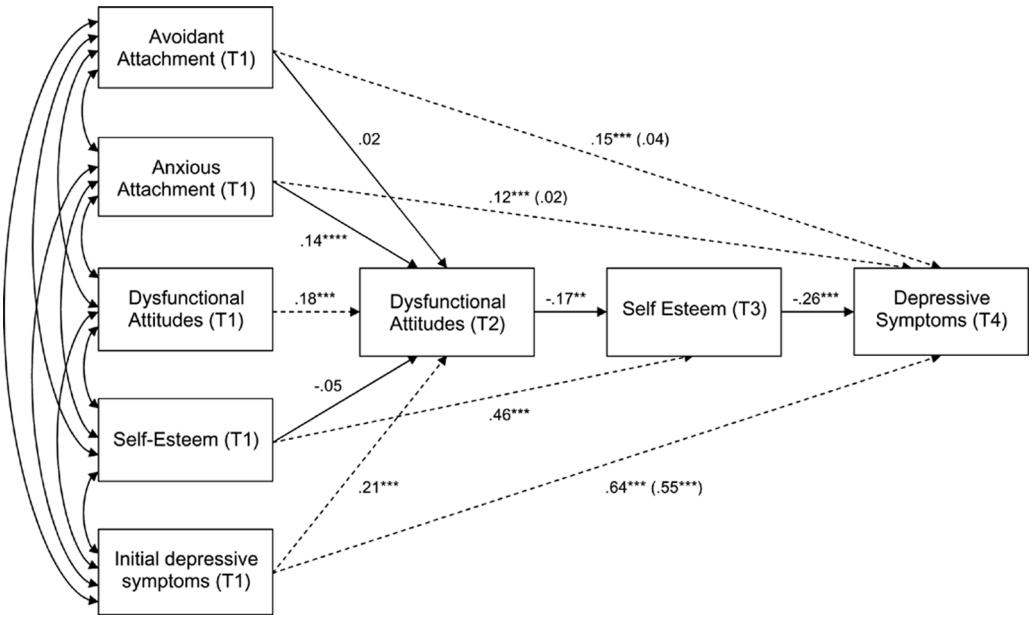

FIGURE 1 Path analysis examining cognitive factors as mediators between attachment dimensions and depressive symptoms. *Note*: $N = 350$. $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

Consistent with all requirements for mediation, Figure 1 shows that T1 anxious attachment, but not avoidant attachment, predicted changes in dysfunctional attitudes from T1 to T2 after controlling for baseline dysfunctional attitudes, self-esteem, and depressive symptoms. Dysfunctional attitudes at T2 predicted prospective changes in lower self-esteem at T3 after controlling for T1 self-esteem and depressive symptoms. Prospective changes in low self-esteem at T3 predicted prospective elevations of T4 depressive symptoms after controlling for initial depression. Finally, the association between T1 anxious attachment and T4 depressive symptoms was no longer significant after including these cognitive mediating factors.

Likewise for anxiety symptoms, T1 anxious attachment, but not avoidant attachment, predicted

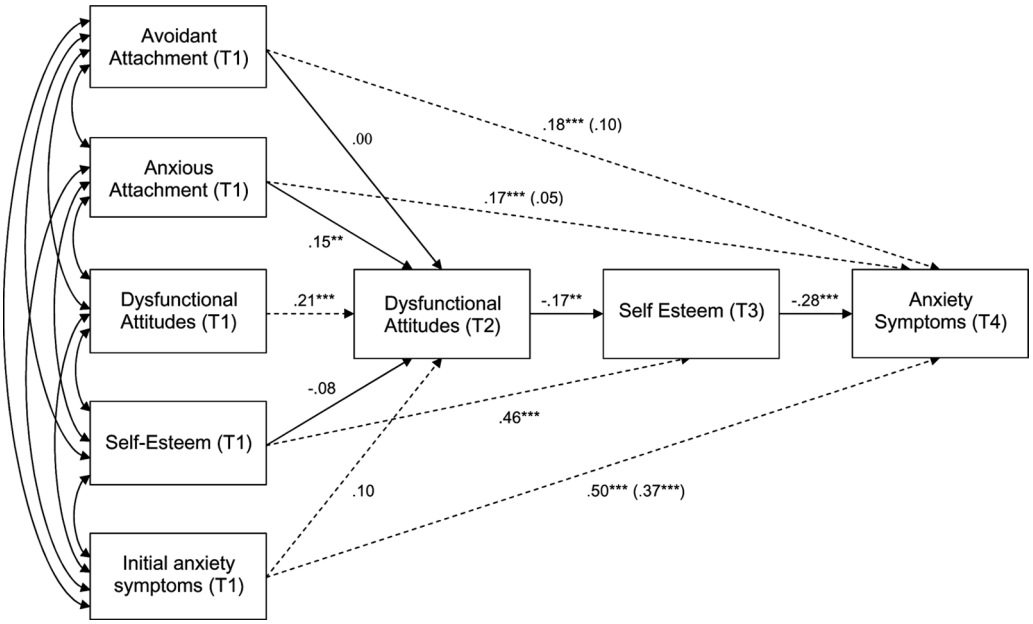

FIGURE 2 Path analysis examining cognitive factors as mediators between attachment dimensions and anxiety symptoms. *Note*: $N = 350$. $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

changes in dysfunctional attitudes from T1 to T2 after controlling for baseline dysfunctional attitudes, self-esteem, and anxious symptoms (see Figure 2). Dysfunctional attitudes at T2 predicted prospective changes in lower self-esteem at T3 after controlling for T1 self-esteem and anxiety symptoms, and T3 self-esteem predicted prospective elevations of anxiety symptoms at T4 after controlling for initial anxiety symptoms. The association between T1 anxious attachment and T4 anxiety symptoms was no longer significant after including these cognitive mediating factors.

In addition to each of the mediating paths being significant and the association between T1 anxious attachment and T4 anxiety and depressive symptoms being nonsignificant, we used the Sobel test to verify that the cognitive factors significantly mediated the anxious attachment link with prospective symptoms of anxiety and depression. The Sobel test was significant for the anxious attachment to depressive symptoms link ($z = 4.72$, $p < .001$) and for the anxious attachment to anxiety symptoms link ($z = 4.52$, $p < .001$). Sobel tests were not computed for potential mediation of the association between avoidant attachment and later symptoms because avoidant attachment did not predict prospective changes in dysfunctional attitudes, which was a necessary path for the hypothesized mediational model. Finally, the inclusion of dysfunctional attitudes and self-esteem in the model substantially reduced the association between anxious attachment and depressive symptoms (83%) as well as the association between anxious attachment and anxiety symptoms (70%). Thus, the cognitive factors mediational pathway linking anxious attachment was supported fairly strongly for both depressive symptoms and anxiety symptoms.

Cognitive Factors Mediation Pathway Accounting for the Association Between Attachment and Symptoms of Anxiety and Depression While Controlling for Overlapping Co-occurring Symptoms

Finally, we conducted similar path analyses, as just reported, with the exception that co-occurring symptoms were included in the model as a covariate (i.e., T1 anxiety symptoms included in the depression model, T1 depressive symptoms included in the anxiety model) to examine more rigorously whether mediation by these cognitive factors was maintained when controlling for the well known co-occurrence between anxiety and depressive symptoms. These models fit the data well for the depression model, $\chi^2(9) = 58.63$ (CFI = .96) and the anxiety model, $\chi^2(9) = 56.7$ (CFI = .96).

In essence, after controlling for co-occurring symptoms (i.e., T1 anxiety symptoms in the depression model, and T1 depressive symptoms in the anxiety model), the main findings from the prior mediational analyses were maintained as the same pathways continued to be significant. Path coefficients from these analyses are presented in Table 2. For the sake of comparison, the path coefficients for these models are presented alongside the coefficients from the models in which co-occurring symptoms were not included. Because the beta coefficients were similar in both sets of models, only figures for the initial set of models are presented.

The cognitive factors of dysfunctional attitudes and low self-esteem mediated the associations between anxious attachment and prospective elevations in depressive symptoms as well as anxiety symptoms. The standardized beta estimates for the depression model were nearly identical regardless of whether co-occurring anxiety symptoms were controlled, whereas the path estimates decreased somewhat for the anxiety model when co-occurring depressive symptoms were controlled. For instance, note that $\beta = .19$ for T3 self-esteem to T4 anxiety symptoms when controlling for T1 depressive symptoms, compared to $\beta = .28$ for the same path (T3 self-esteem to T4 anxiety symptoms) when co-occurring T1 depressive symptoms was not controlled. Finally, these mediating cognitive factors of dysfunctional attitudes and low self-esteem accounted for 100% of the association between anxious attachment and depressive symptoms and 88% of the association between anxious attachment and anxiety symptoms.

DISCUSSION

Our study examined insecure attachment dimensions, dysfunctional attitudes, and low self-esteem as prospective predictors of depressive and anxiety symptoms. Specifically, we hypothesized that dysfunctional attitudes and lowered self-esteem would mediate the longitudinal association between insecure attachment and prospective increases in depressive and anxiety symptoms after controlling for initial symptoms and temporally preceding dysfunctional attitudes and self-esteem. Results generally supported these hypotheses. The cognitive mediators (dysfunctional attitudes and low self-esteem) accounted for most of the association between baseline anxious attachment and prospective increases in both depressive and anxiety symptoms but not the link between avoidant attachment and later internalizing symptoms.

Results suggest that both dimensions of insecure attachment contributed to later emotional distress through direct pathways even after controlling for initial symptom levels. Specifically, anxious and avoidant attachment each predicted prospective changes in depressive symptoms. These findings are consistent with those of Hankin et al. (2005), who also found that both

anxious and avoidant attachment predicted depressive symptoms. Similarly, others (Reinecke & Rogers, 2001; Roberts et al., 1996; Whisman & McGarvey, 1995), using different attachment subscales or measures, also showed that insecure attachment is associated with depressive symptoms. Regarding anxiety, anxious and avoidant attachment also predicted prospective changes in anxiety symptoms. These results are consistent with Hankin et al. (2005), who found that insecure attachment predicted prospective changes in anxiety symptoms over 2 years. These findings suggest that insecure attachment may in fact act as a risk factor for, and not merely as a correlate of, both depressive and anxiety symptoms. Finally, these results were maintained even when co-occurring symptoms of the other internalizing dimension (e.g., covarying baseline anxiety to predict later depressive symptoms) were controlled.

Mediation analyses showed that only anxious attachment contributed to later depressive and anxiety symptoms through the indirect cognitive pathway of dysfunctional attitudes and its more proximal manifestation of self-esteem. These findings were obtained even under stringent statistical controls in which initial internalizing symptoms and preceding levels of the mediators (i.e., dysfunctional attitudes and self-esteem at baseline) were controlled. As such, because the mediating cognitive variables measured earlier actually preceded the cognitive constructs later in time, it is more likely that these cognitive factors temporally precede and mediate the link between anxious attachment and later internalizing symptoms. By assessing these cognitive factors earlier and at different points in time, and statistically controlling for them, we were able to rule out one alternative hypothesis in which it could have been argued that it was the stability of one of the cognitive constructs (e.g., low self-esteem over time) that was associated with the other mediating factor (e.g., dysfunctional attitudes) at a different time point and that the stability of low self-esteem over time was the sole and primary factor contributing to later internalizing symptoms (cf., Cole & Maxwell, 2003). In essence, by assessing the cognitive factors at different time points and statistically controlling for temporally preceding levels of dysfunctional attitudes and low self-esteem, we have more confidently supported the hypothesized temporal mediational pathway (i.e., anxious attachment to dysfunctional attitudes, dysfunctional attitudes to lowered self-esteem, and finally lowered self-esteem to later internalizing symptoms) and eliminated a plausible alternative hypothesis.

Still, it is important to interpret these results with caution because of the correlational nature of the data and the possibility that other unmeasured third variables, that are associated with dysfunctional attitudes and/or low self-esteem, may be the key mediating force. For example, we did not include and analyze depressive and/or anxiety symptoms at T2 and T3, and these symptoms may contribute strongly to dysfunctional attitudes and/or low self-esteem at those time points, such that it is the influence of these internalizing symptoms, or some other unmeasured etiological factor that predicts these symptoms (e.g., biological or genetic factors), that drives this mediating process. Including assessments of internalizing symptoms and other etiological factors at these different time points would help to rule out such alternative hypotheses that dysfunctional attitudes and/or self-esteem are proxies for other core etiological processes and would provide for an even more unambiguous conclusion about the role of these cognitive factors as mediating processes in this pathway from anxious attachment to later internalizing symptoms.

However, the findings that the association between anxious attachment and anxiety symptoms was mediated by dysfunctional attitudes and self-esteem were contrary to predictions and past research with young adults (Hankin et al., 2005). These results are inconsistent with our expectations based on theoretical and empirical grounds. Presumably, Beck's dysfunctional attitudes (Beck, 1987) specifically predict depressive symptoms (Hankin, Abramson, Miller, & Haeffel, 2004; Hankin et al., in press) and not both depressive and anxiety symptoms. As well, Hankin et al. (2005) found that the cognitive mediation pathway of dysfunctional attitudes and low self-esteem predicted prospective elevations of depressive, but not anxiety, symptoms among young adults. It is not entirely clear why this difference between studies was found, although a potential developmental hypothesis is worth exploring in future research. It may be that these cognitive factors become more specifically associated with depressive symptoms, and less predictive of co-occurring symptoms like anxiety, as youth age and mature into young adults given the developmental axiom that various factors and processes tend to progress from relatively undifferentiated to more specific as individuals mature and develop over the lifespan. Clearly, this hypothesis of the developmental unfolding of processes accounting for the sequential co-occurrence of anxiety and depressive symptoms would need to be tested more rigorously in future research.

Finally, the cognitive factors of dysfunctional attitudes and low self-esteem did not mediate the link between avoidant attachment and later internalizing symptoms because avoidant attachment did not predict prospective changes in dysfunctional attitudes after controlling for baseline dysfunctional attitudes, self-esteem, and internalizing symptoms. The past research that has supported this cognitive mediation pathway for avoidant attachment (Hankin et al., 2005; Roberts et al., 1996) used two-time-point designs in which avoidant attachment and dysfunctional attitudes were assessed

concurrently and analyzed via cross-sectional bivariate correlations to establish an association. Because our study followed rigorous recommendations for testing longitudinal associations in mediation (Cole & Maxwell, 2003) by assessing constructs at different time points and controlling for prior levels to stringently evaluate the temporal ordering of etiological processes implied in this mediation model, the discrepancy in findings could be explained by the more rigorous methodological and statistical controls employed in our study.

It also may be that avoidant attachment does not strongly contribute to prospective increases in dysfunctional attitudes compared with anxious attachment. When both anxious and avoidant attachment were entered as predictors, avoidant attachment did not add additional predictive value above and beyond anxious attachment. Instead, it is possible that an avoidant attachment style may predict an overall decrease in the total number of interpersonal interactions, which in turn would likely predict an overall decrease in the number of positive interactions. And it is reasonable to assume that a relatively low number of positive interactions is associated with depressive symptoms (anhedonia) or social anxiety. Thus, it may be that the association between avoidant attachment style and depressive and anxiety symptoms may be better explained by interpersonal variables that were not measured in our study.

Strengths and Limitations

Our study advances the literature in several important ways. First, this is the first study, to our knowledge, to examine prospectively dysfunctional attitudes and low self-esteem as mediators of the associations between insecure attachment and later symptoms of depression and anxiety in a sample of adolescents. Second, the sample in this study was drawn from both urban and suburban schools and was ethnically and socioeconomically diverse, broadening the generalizability of these findings. Third, the use of a multiwave longitudinal design allowed for the prediction of changes in symptoms over time. It is important to note that the cognitive mediators were each assessed and analyzed at separate and subsequent time points from baseline attachment to later symptoms, so the tested mediational pathway was truly longitudinal (Cole & Maxwell, 2003). Fourth, including anxiety symptoms as an outcome allowed for an examination of insecure attachment dimensions as a specific versus common risk factor for symptoms of depression and anxiety. Finally, the attachment measure used in this study is based on the most recent theoretical conceptualization of attachment, and is the most recent empirically supported measure that assesses the two main dimensions of attachment.

However, there were some limitations to this study that provide directions for future research. First, a relatively short amount of time elapsed between each time point, and although shorter time intervals between assessments improve accurate recall of symptoms, assessments over a longer period can provide more information on the strength of the predictive power of insecure attachment dimensions and cognitive factors on prospective changes in depressive and anxiety symptoms. Also, to examine mediation models properly, according to the statistical recommendations of Cole and Maxwell (2003), the optimal timing between time points necessary to allow for the developmental unfolding of mediational processes needs to be known to establish the spacing of time points in a longitudinal design. It is unknown how much time must pass for anxious attachment to affect dysfunctional attitudes, and in turn lowered self-esteem, and finally elevated internalizing symptoms. Given that this is the first study to use multiple waves of data and control for preceding levels of the mediating variables, it will be important for future research to use different time intervals between assessments to seek the optimal time lag between data points and determine the magnitude of the longitudinal effects of prior and intermediate variables on subsequent points in the hypothesized cognitive causal chain. We view this study as an important first step toward understanding the mediational processes explaining the association between insecure attachment dimensions and later internalizing symptoms using a relatively short time lag between assessments.

Second, the use of self-report measures introduces issues of potential reporter-bias and shared method variance. Additional assessment modalities (e.g., observational tasks, multiple informants), in addition to self-report measures, can contribute to a more objective and accurate understanding of the phenomena. For example, parents, peers, and teachers could be included in future research as informants on youths' symptom levels, and child-attachment interviews could be used to assess attachment dimensions. Third, we assessed anxiety symptoms using the MASQ to provide a relatively more specific measurement of anxiety problems compared with general, shared negative affect that is known to be common to both depression and anxiety (Clark & Watson, 1991; Mineka, Watson, & Clark, 1998). However, there are different ways to assess other aspects of anxiety (Silverman & Ollendick, 2005), and including other measures of these anxiety constructs would help to provide a broader assessment of the multifaceted nature of anxiety with multiple measures and informants to reduce concerns about method variance.

Implications for Research, Policy, and Practice

In sum, insecure attachment dimensions predicted later symptoms of both depression and anxiety, even after controlling for co-occurring symptoms, and the prospective association between anxious attachment and later internalizing symptoms was mediated by the cognitive factors of dysfunctional attitudes and low self-esteem. Thus, these cognitive mediators may not be a depression-specific vulnerability factor for explaining the longitudinal association between insecure attachment and later depressive symptoms but instead may be related to general emotional distress or internalizing symptoms, at least among adolescents. Finally, our study provides additional evidence that both cognitive and interpersonal factors contribute to the developmental pathways that lead to symptoms of depression and anxiety during adolescence and supports the utility of attachment theory as a framework for conceptually integrating both cognitive and interpersonal perspectives in the development of cognitive vulnerabilities to internalizing distress.

These findings may inform clinical practice and interventions as the results suggest additional support for targeting both the parent-child relationship and intraindividual cognitive factors in the treatment of symptoms of depression and anxiety in adolescents. In addition, replication of these findings should also be conducted with younger aged youth. Extending the research down to a younger sample may be helpful in understanding when these pathways develop and may help identify when interventions might be most effective. Finally, future research should continue to examine how anxious and avoidant attachment may be related to the co-occurrence between depressive and anxiety symptoms as there are likely other pathways (e.g., rejection sensitivity, excessive reassurance seeking) that may also be involved in the link between insecure attachment dimensions and later emotional distress symptoms.

REFERENCES

Abela, J. R. Z., & Hankin, B. L. (2007). Cognitive vulnerability to depression in children and adolescence: A developmental psychopathology approach. In J. R. Z. Abela & B. L. Hankin (Eds.), *Handbook of child and adolescent depression* (pp. 35–78). New York: Guilford.

Abela, J. R. Z., Hankin, B. L., Haigh, E. A. P., Adams, P., Vinokuroff, T., & Trayhern, L. (2005). Interpersonal vulnerability to depression in high-risk children: The role of insecure attachment and reassurance seeking. *Journal of Clinical Child and Adolescent Psychology*, *34*, 182–192.

Abramson, L. Y., Alloy, L. B., Hankin, B. L., Haeffel, G. J., MacCoon, D., & Gibb, B. E. (2002). Dysfunctional attitudes-stress models of depression in a self-regulatory and psychobiological context. In I. H. Gotlib & C. L. Hammen (Eds.), *Handbook of depression* (pp. 295–313). New York: Guilford.

Angold, A., Costello, E. J., & Erkanli, A. (1999). Comorbidity. *Journal of Child Psychology and Psychiatry*, *40*, 57–87.

Arbuckle, J. L. (1999). *Amos user's guide*. Chicago: SmallWaters.

Baron, R. M., & Kenny, D. A. (1986). The moderator-ediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173–1182.

Beck, A. T. (1987). Cognitive models of depression. *Journal of Cognitive Psychotherapy: An International Quarterly*, *1*, 5–37.

Birmaher, B., Ryan, N. D., Williamson, D. E., Brent, D. A., Kaufman, J., Dahl, R. E., et al. (1996). Childhood and adolescent depression: A review of the past 10 years. Part I. *Journal of the American Academy of Child & Adolescent Psychiatry*, *35*, 1427–1439.

Bowlby, J. (1980). *Attachment and loss: Vol. 3. Loss, sadness and depression*. New York: Basic Books.

Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46–76). New York: Guilford.

Burns, D. D., & Spangler, D. L. (2001). Do changes in dysfunctional attitudes mediate changes in depression and anxiety in cognitive behavioral therapy? *Behavior Therapy*, *32*, 337–369.

Clark, L. A., & Watson, D. (1991). Tripartite model of anxiety and depression: Psychometric evidence and taxonomic implications. *Journal of Abnormal Psychology*, *100*, 316–336.

Cole, D. A., & Maxwell, S. E. (2003). Testing mediational models with longitudinal data: Questions and tips in the use of structural equation modeling. *Journal of Abnormal Psychology*, *112*, 558–577.

Costello, E. J., Egger, H. L., & Angold, A. (2005). The developmental epidemiology of anxiety disorders: Phenomenology, prevalence, and comorbidity. *Child and Adolescent Psychiatric Clinics of North America*, *14*, 631–648.

Costello, E. J., Erkanli, A., & Angold, A. (2006). Is there an epidemic of child or adolescent depression? *Journal of Child Psychology and Psychiatry*, *47*, 1263–1271.

Coyne, J. C. (1976). Toward an interactional description of depression. *Psychiatry*, *39*, 28–40.

Craighead, W. E., Curry, J. F., & Ilardi, S. S. (1995). Relationship of Children's Depression Inventory factors to major depression among adolescents. *Psychological Assessment*, *7*, 171–176.

Davila, J., Ramsay, M., Stroud, C. B., & Steinberg, S. (2005). Attachment as vulnerability to the development of psychopathology. In B. L. Hankin & J. R. Z. Abela (Eds.), *Development of psychopathology: A vulnerability-stress perspective* (pp. 215–242.) Thousand Oaks, CA: Sage.

Eng, W., Heimberg, R. G., Hart, T. A., Schneier, F. R., & Liebowitz, M. R. (2001). Attachment in individuals with social anxiety disorder: The relationship among adult attachment styles, social anxiety, and depression. *Emotion*, *1*, 365–380.

Fairchild, A. J., & Finney, S. J. (2006). Investigating validity evidence for the Experiences in Close Relationships–Revised Questionnaire. *Educational and Psychological Measurement*, *66*, 116–135.

Fraley, R. C. (2002). Attachment stability from infancy to adulthood: Meta-analysis and dynamic modeling of developmental mechanisms. *Personality and Social Psychology Review*, *6*, 123–151.

Fraley, R. C., Niedenthal, P. M., Marks, M., Brumbaugh, C., & Vicary, A. (2006). Adult attachment and the perception of emotional expressions: Probing the hyperactivating strategies underlying anxious attachment. *Journal of Personality*, *74*, 1163–1190.

Fraley, R. C., & Spieker, S. J. (2003). Are infant attachment patterns continuously or categorically distributed? A taxometric analysis of Strange Situation behavior. *Developmental Psychology*, *39*, 387–404.

Fraley, R. C., & Waller, N. G. (1998). Adult attachment patterns: A test of the typological model. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 77–114). New York: Guilford.

Gamble, S. A., & Roberts, J. E. (2005). Adolescents' perceptions of primary caregiversand cognitive style: The roles of attachment security and gender. *Cognitive Therapy and Research*, *29*, 123–141.

Haaga, D. A. F., Yarmus, M., Hubbard, S., Brody, C., Solomon, A., Kirk, L., et al. (2002). Mood dependency of self-rated attachment style. *Cognitive Therapy and Research*, *26*, 57–71.

Hamilton, C. E. (2000). Continuity and discontinuity of attachment from infancy through adolescence. *Child Development*, *71*, 690–694.

Hankin, B. L. (2005). Childhood maltreatment and psychopathology: Prospective tests of attachment, cognitive vulnerability, and stress as mediating processes. *Cognitive Therapy and Research*, *29*, 645–671.

Hankin, B. L. (2008a). Cognitive vulnerability–Stress model of depression during adolescence: Investigating depressive symptom specificity in a multi-wave prospective study. *Journal of Abnormal Child Psychology*, *36*, 999–1014.

Hankin, B. L. (2008b). Rumination and depression in adolescence: Investigating symptom specificity in a multiwave prospective study. *Journal of Clinical Child and Adolescent Psychology*, *37*, 701–713.

Hankin, B. L., & Abramson, L. Y. (2001). Development of sex differences in depression: An elaborated cognitive vulnerability-transactional stress theory. *Psychological Bulletin*, *127*, 773–796.

Hankin, B. L., Abramson, L. Y., Miller, N., & Haeffel, G. J. (2004). Cognitive vulnerability-stress theories of depression: Examining affective specificity in the prediction of depression versus anxiety in three prospective studies. *Cognitive Therapy and Research*, *28*, 309–345.

Hankin, B. L., Abramson, L. Y., & Siler, M. (2001). A prospective test of the hopelessness theory of depression in adolescence. *Cognitive Therapy and Research*, *25*, 607–632.

Hankin, B. L., Kassel, J. D., & Abela, J. R. Z. (2005). Adult attachment dimensions and specificity of emotional distress symptoms: Prospective investigations of cognitive risk and interpersonal stress generation as mediating mechanisms. *Personality Social Psychology Bulletin*, *31*, 136–151.

Hankin, B. L., Wetter, E., Cheely, C., & Oppenheimer, C. (in press). Beck's cognitive theory of depression in adolescence: Prospective prediction of depressive symptoms and transactional influences in a multi-wave study. *International Journal of Cognitive Therapy*.

Harter, S. (1985). *Manual for the Self-Perception Profile for Children*. Unpublished manuscript, University of Denver, Denver, CO.

Harter, S. (1999). *The construction of the self: A developmental perspective*. New York: Guilford.

Hazan, C., & Shaver, P. R. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology*, *52*, 511–524.

Hazan, C., & Shaver, P. R. (1994). Attachment as an organizational framework for research on close relationships. *Psychological Inquiry*, *5*, 1–22.

Holmbeck, G. N. (2002). Post-hoc probing of significant moderational and mediational effects in studies of pediatric populations. *Journal of Pediatric Psychology*, *27*, 87–96.

Irons, C., & Gilbert, P. (2005). Evolved mechanisms in adolescent anxiety and depression symptoms: The role of the attachment and social rank systems. *Journal of Adolescence*, *28*, 325–341.

Kaslow, N., Adamson, L. B., & Collins, M. (2000). A developmental psychopathology perspective on the cognitive components of child and adolescent depression. In A. J. Sameroff, M. Lewis, & S. M. Miller (Eds.), *Handbook of developmental psychopathology* (2nd ed.)., (pp. 491–510). Dordrecht, the Netherlands: Kluwer Academic.

Klein, D. N., Dougherty, L. R., & Olino, T. M. (2005). Toward guidelines for evidence-based assessment of depression in children and adolescents. *Journal of Clinical Child and Adolescent Psychology*, *34*, 412–432.

Kovacs, M. (1981). Rating scales to assess depression in school-aged children. *Acta Paedopsychiatrica: International Journal of Child & Adolescent Psychiatry*, *46*, 305–315.

Kovacs, M. (1985). The Children's Depression Inventory. *Psychopharmacology Bulletin*, *21*, 995–998.

Kuiper, N. A., & Olinger, L. J. (1986). Dysfunctional attitudes and a self-worth contingency model of depression. *Advances in Cognitive-Behavioral Research and Therapy*, *5*, 115–142.

Lakdawalla, Z., Hankin, B. L., & Mermelstein, R. (2007). Cognitive theories of depression in children and adolescents: A conceptual and quantitative review. *Child Clinical and Family Psychology Review*, *10*, 1–24.

Lewinsohn, P. M., Joiner, T. E., & Rohde, P. (2001). Evaluation of cognitive diathesis-stress models in predicting major depressive disorder in adolescents. *Journal of Abnormal Psychology*, *110*, 203–215.

Maxwell, S. E., & Cole, D. A. (2007). Bias in cross-sectional analyses of longitudinal mediation. *Psychological Methods*, *12*, 23–44.

Mikulincer, M., & Shaver, P. (2007). *Attachment in adulthood: Structure, dynamics, and change*. New York: Guilford.

Mineka, S., Watson, D., & Clark, L. A. (1998). Comorbidity of anxiety and unipolar mood disorders. *Annual Review of Psychology*, *49*, 377–412.

Muris, P., & Meesters, C. (2002). Attachment, behavioral inhibition, and anxiety disorders symptoms in normal adolescents. *Journal of Psychopathology & Behavioral Assessment*, *24*, 97–106.

Muris, P., Meesters, C., & Fijen, P. (2003). The Self-Perception Profile for Children: Further evidence for its factor structure, reliability, and validity. *Personality and Individual Differences*, *35*, 1791–1802.

Muris, P., Meesters, C., van Melick, M., & Zwambag, L. (2001). Self-reported attachment style, attachment quality, and symptoms of anxiety and depression in young adolescents. *Personality and Individual Differences*, *30*, 809–818.

Reinecke, M. A., & Rogers, G. M. (2001). Dysfunctional attitudes and attachment style among clinically depressed adults. *Behavioural and Cognitive Psychotherapy*, *29*, 129–141.

Roberts, J. E., Gotlib, I. H., & Kassel, J. D. (1996). Adult attachment security and symptoms of depression: The mediating roles of dysfunctional attitudes and low self-esteem. *Journal of Personality and Social Psychology*, *70*, 310–320.

Safford, S. M., Alloy, L. B., Crossfield, A. G., Morocco, A. M., & Wang, J. C. (2004). The relationship of cognitive style and attachment style to depression and anxiety in young adults. *Journal of Cognitive Psychotherapy*, *18*, 25–41.

Scher, C. D., Ingram, R. E., & Segal, Z. V. (2005). Cognitive reactivity and vulnerability: Empirical evaluation of construct activation and cognitive diatheses in unipolar depression. *Clinical Psychology Review*, *25*, 487–510.

Shaver, P. R., Schachner, D. A., & Mikulincer, M. (2005). Attachment style, excessive reassurance seeking, relationship processes, and depression. *Personality and Social Psychology Bulletin*, *31*, 343–359.

Silverman, W. K., & Ollendick, T. H. (2005). Evidence-based assessment of anxiety and its disorders in children and adolescents. *Journal of Clinical Child and Adolescent Psychology*, *34*, 380–411.

Smucker, M. R., Craighead, W. E., Craighead, L. W., & Green, B. J. (1986). Normative and reliability data for the Children's Depression Inventory. *Journal of Abnormal Child Psychology*, *14*, 25–39.

Sroufe, L. A., Carlson, E. A., Levy, A. K., & Egeland, B. (1999). Implications of attachment theory for developmental psychopathology. *Development & Psychopathology*, *11*, 1–13.

Watson, D., Weber, K., Assenheimer, J. S., Clark, L. A., Strauss, M. E., & McCormick, R. A. (1995). Testing a tripartite model: I. Evaluating the convergent and discriminant validity of anxiety and depression scales. *Journal of Abnormal Psychology*, *104*, 3–14.

Wei, M., Mallinckrodt, B., Russell, D. W., & Abraham, W. T. (2004). Maladaptive perfectionism as a mediator and moderator between adult attachment and depressive mood. *Journal of Counseling Psychology*, *51*, 201–212.

Whisman, M. A., & McGarvey, A. L. (1995). Attachment, depressogenic cognitions, and dysphoria. *Cognitive Therapy and Research*, *19*, 633–650.

Williamson, D. E., Forbes, E. E., Dahl, R. E., & Ryan, N. D. (2005). A genetic epidemiologic perspective on comorbidity of depression and anxiety. *Child and Adolescent Psychiatric Clinics of North America*, *14*, 707–726.

Winters, N. C., Myers, K., & Proud, L. (2002). Ten-Year Review of Rating Scales. III: Scales Assessing suicidality, cognitive style, and self-esteem. *Journal of the American Academy of Child & Adolescent Psychiatry*, *41*, 1150–1181.