

# Insecure Attachment to Parents and Depressive Symptoms in Early Adolescence: Mediating Roles of Attributions and Self-esteem

Katy Kamkar<sup>1,2</sup>, Anna-Beth Doyle<sup>1</sup> & Dorothy Markiewicz<sup>1,3</sup>

<sup>1</sup>Department of Psychology, Concordia University, Montreal, Canada

<sup>2</sup> Centre for Addiction and Mental Health, Toronto, Canada

<sup>3</sup> Department of Psychology, Brock University, St. Catharines, Canada

Correspondence: Katy Kamkar, Stress and Health Program/Psychological Trauma Program, Centre for Addiction and Mental Health, 455 Spadina Avenue, Suite 200, Toronto, Ontario, M5S 2G8, Canada. E-mail: katykamkar@gmail.com

Received: April 27, 2012

Accepted: May 9, 2012

Published: June 1, 2012

doi:10.5539/ijps.v4n2p3

URL: <http://dx.doi.org/10.5539/ijps.v4n2p3>

*This research was completed with assistance from the Social Sciences and Humanities Research Council of Canada and the Quebec Fonds FCAR. Portions of this paper were presented at the Canadian Psychological Association, St. John's Newfoundland, June 2004 and Montreal, Quebec, June 2005.*

## Abstract

This study examined the association of attachment style with mother and father with depressive symptoms among early adolescent boys and girls ( $N= 140$ ), and whether this association was mediated by attributional styles and/or self-esteem. As expected, adolescents more anxiously attached to both mother and father reported the most depressive symptoms. Anxious attachment to mother was associated with depressive symptoms for girls only and this association was fully mediated by both maladaptive attributions for negative events and by self-esteem. These findings indicate the importance of negative attributions and self-esteem as pathways through which girls' anxious attachment to mother might lead to depressive symptoms.

**Keywords:** attachment, adolescence, attributions, depression, self-esteem

## 1. Introduction

Rates of depression are found to increase with age, particularly in adolescence, with middle adolescent girls showing significantly more depressive symptoms than adolescent boys (Hankin et al., 1998). Both attachment theory and the hopelessness theory of depression offer important theoretical insights into the processes that produce vulnerability to depression (e.g., Ingram, Miranda, & Segal, 1998), highlighting negative attributions and low self-esteem. Support has been found for the mediating role of attributions among middle adolescent girls (e.g., Margolese, Markiewicz, & Doyle, 2005). The present study examines whether similar processes operate developmentally prior to the increase in depressive symptoms, specifically whether attributions and/or self-esteem mediate the relations between insecure attachment to parents and depressive symptoms in early adolescence.

### 1.1 Attachment to Parents in Adolescence

Attachment theory (Bowlby, 1969) explains how parental closeness is protective and a source of security in infancy and childhood (Ainsworth, Blehar, Waters & Wall, 1978). Until late adolescence, parents remain the primary attachment figures (Hazan & Zeifman, 1994), with mother being consistently the preferred figure to turn to in times of stress and need for security and support (e.g., Markiewicz, Lawford, Doyle & Haggart, 2006), particularly for adolescent girls (e.g., Youniss & Smollar, 1985). Although the attachment relationship between the father and the adolescent becomes more limited in communication and emotional quality over time, the adolescent continues to view his or her father as an important attachment figure (Paterson, Field & Pryor, 1994). Thus, in the present study, the associations between attachment to each parent and depressive symptoms are examined, and attachment to mother was posited to moderate the associations between attachment to father and depressive symptoms.

Variability in attachment organization has been found to fall along two attachment dimensions, attachment anxiety (i.e., variability in fear of abandonment, rejection, and loss) and attachment avoidance (i.e., degree of discomfort with intimacy, closeness, and dependence; Brennan, Clarke & Shaver, 1998). Self-report measures of attachment anxiety and avoidance have been shown to be valid measures of working models (i.e., mental representations) of self and others, and to tap conscious appraisals of feelings and behaviors in close relationships as well as defensive and unconscious processes related to affect regulation and attachment system activation (e.g., Shaver & Mikulincer, 2004). At the time of this study, few adolescent-parent attachment measures that distinguished attachment anxiety from avoidance existed; however, Bartholomew's Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991) had been adapted to specific targets (e.g., Margolese et al., 2002; Doyle & Markiewicz, 2005; Ducharme, Doyle & Markiewicz, 2002). Limitations of the single paragraph RQ measures led Bartholomew to develop the Relationship Scales Questionnaire (Griffin & Bartholomew, 1994) adapted for use in the present study.

### *1.2 Attachment and Depression*

Attachment theory provides a valuable framework for understanding the developmental origins of cognitive vulnerabilities for depression (e.g., Bowlby, 1969/1982; Bretherton & Waters, 1985). Working models, which are mental representations of self and other in early attachment relationships, are influential into adulthood (e.g., Fraley, 2002). Early adolescents who report being insecurely attached to their parents endorse more depressive symptoms than those who report being securely attached (e.g., Doyle, Brendgen, Markiewicz & Kamkar, 2003; Kenny, Moilanen, Lomax & Brabeck, 1993). Bowlby (1969) distinguished the predisposition to depression of anxiously and avoidantly attached individuals. Anxiously attached individuals are excessively dependent on others, are unable to distance themselves from conflictual relationships, and become vulnerable particularly to the internalizing symptoms of unipolar affective disorders (e.g., self-blame, self-deprecation) in the presence of loss and abandonment (e.g., Blatt & Homann, 1992, for a review; Mikulincer & Orbach, 1995). Anxious attachment has been found to be more associated with depressive symptoms for adolescent girls than boys (Cooper, Shaver & Collins, 1998). Avoidant (i.e., compulsively self-reliant) individuals avoid others and show contempt toward individuals wishing to have intimate relationships. They also tend to dismiss the importance of sources of stress, and inhibit access to negative affect and thoughts. Their self-isolation and self-criticism, however, make them also vulnerable to depressive symptoms, particularly to the externalizing symptoms of unipolar affective disorder (e.g., interpersonal hostility; Blatt & Homann, 1992, for a review). Thus, in the present study, anxious attachment was expected to be more strongly linked to depression than avoidant attachment, and to moderate the effects of avoidant attachment.

### *1.3 Relations among Attachment, Attributions and Depression*

A negative cognitive or explanatory style attributes negative outcomes to causes that are internal (due to self), stable (enduring over time), and global (affecting outcomes in many life domains; e.g., Abramson, Metalsky & Alloy, 1989). The relation between maladaptive attributional styles and depression has received substantial empirical support (e.g., Metalsky, Halberstadt & Abramson, 1987) across age, in both males and females, and in clinical and nonclinical samples (e.g., Joiner & Wagner, 1995). Factor analytic studies also show that attributions and depressive symptoms are distinct constructs (Joiner & Rudd, 1996). Although most studies have not found gender differences in adolescents' attributional style (e.g., Hankin, Abramson & Siler, 2001), one study found that girls' more negative cognitive style explained their higher depressive symptoms compared with boys (Hankin & Abramson, 2002). In a clinical sample of depressed early adolescents, self-reported attachment to parents, attributional style and depression were associated (Armsden, McCauley, Greenberg, Burke & Mitchell, 1990). Secure self-reported attachment prototypes were associated positively with internal, stable and global attributions to positive events and negatively with attributions to negative events for late adolescent females (although not for males; Greenberger & McLaughlin, 1998).

Negative attributions were also found to mediate the association between attachment to mother and depressive symptoms in middle adolescence (Margolese et al., 1995). Attributions were assessed using a vignette task where adolescents were presented with hypothetical interpersonal stressful events and asked to indicate their thoughts about themselves and about the other person in the situation. Adolescent girls with more negative models of self and of other in relation to mother (assessed dimensionally with the Relationship Questionnaire; Bartholomew & Horowitz, 1991) made more negative attributions about themselves and the other in response to stress, which, in turn, were associated with greater depressive symptoms. Models of self and other with mother were not significantly associated with depressive symptoms for boys. In the present study, results were thus expected to be stronger for girls.

#### *1.4 Relations among Attachment, Self-esteem and Depression*

Security of attachment to parents is also associated with self-esteem across adolescence (Doyle, Markiewicz & Brendgen, 2000; Doyle et al., 2003; McCormick & Kennedy, 1994). Evidence also supports a causal role for attachment. In a two-year longitudinal study, early adolescents more insecurely attached to their parents, in particular those more anxiously attached, reported an increase in internalizing problems and decrease in self-esteem over time (Doyle & Markiewicz, 2005).

Some studies have found that adolescent girls report lower self-esteem than boys in community samples (e.g., Allgood-Merten & Stockard, 1991). Low self-esteem is also found to be an antecedent to depressive symptoms among both adolescents and adults, suggesting that negative self-schemata may constitute a vulnerability factor (e.g., Allgood-Merten, Lewinsohn & Hops, 1990). Factor analytic studies have also shown self-esteem loading on a separate factor of self-regard in addition to loading on depressive symptoms (Joiner & Rudd, 1996). In addition, maladaptive attributions were found to be associated with lower self-esteem over a one-year period among middle to late adolescents (Schwartz, Kaslow, Seeley & Lewinsohn, 2000).

Both dysfunctional attitudes and low self-esteem have been found to mediate the association between self-reported adult attachment security and symptoms of depression (Roberts, Gotlib & Kassel, 1996). Specifically, adults more anxious about their attachment relations and those with more difficulties becoming close to attachment figures endorsed higher dysfunctional attitudes, which, in turn, were associated both with lower levels of self-esteem and more depressive symptoms 8 weeks later, even after controlling for initial depressive symptoms. Because early adolescence is the period when a significant decrease in self-esteem is noticed (Orvaschel, Beeferman & Kabacoff, 1997), as well as when sharp increases and gender differences in depression begin, in the present study self-esteem was examined as a mediator between attachment and depressive symptoms during that age period.

#### *1.5 The Present Study*

The present study investigated negative attributions and self-esteem as mechanisms by which anxious and avoidant attachment to mother and father are associated with depressive symptoms among early adolescents. Given that the quality of the parent-adolescent relationship typically differs with the gender of the parent and the child, adolescents' attachment to mother and father were studied separately, and the adolescent's gender was taken into account. The present study expanded on Margolese et al.'s (1995) investigations of the role of negative attributions in several ways. The mediating role of attributions in the association between attachment and depressive symptoms was studied at an earlier age, among early adolescents, when both depressive symptoms and gender differences were expected to be less pronounced. Moreover, whereas Margolese et al. measured attributions to specific hypothetical interpersonal vignettes, in the present study, to assess generality of results, general attributional styles were assessed by the Children's Attributional Style Questionnaire-Revised (Kaslow & Nolen-Hoeksema, 1991), the most widely used depression-related cognitive measure in adolescence (Ingram, Nelson, Steidtmann & Bistricky, 2007). In addition, the mediating role of self-esteem in the association between attachment and depressive symptoms was studied. Finally, social desirability response bias, a tendency to project favorable images of one's self (Crowne & Marlowe, 1960) was taken into account. Social desirability bias is negatively associated with depressive symptoms (e.g., Clarke, Crewdon & Purdon, 1998) and with anxious and avoidant attachment to parents (Doyle & Markiewicz, 2005).

More anxiously attached adolescents, in particular girls, were expected to report more internalizing symptoms of depressive symptoms. As well, because anxiously attached individuals are more vulnerable to internalizing symptoms of depression, attachment anxiety was hypothesized to moderate the relation between avoidant attachment and depressive symptoms. That is, the association between avoidant attachment and depressive symptoms was expected to be stronger at higher levels of attachment anxiety than at lower levels of attachment anxiety. Because mother is the primary attachment figure and the preferred figure to turn to in times of stress and need, we expected anxious attachment to father to be associated with greater depressive symptoms only at higher levels of anxious attachment to mother. Similar findings were expected for avoidant attachment to father at higher levels of avoidant attachment to mother. Adolescents with more anxious attachment to parents, in particular to mother, were also expected to make more internal, stable and global attributions to negative events, which in turn were expected to be associated with greater depressive symptoms.

Anxious attachment was also expected to be associated negatively with self-esteem. The latter, in turn, was also predicted to lead to greater depressive symptoms. Because anxiously attached girls are likely to be more vulnerable to psychological distress than anxiously attached boys, we expected these associations to be particularly true for girls. As well, negative attributions and self-esteem were expected to be associated,

consistent with Roberts et al. (1996) and Schwartz et al. (2000). Consistent with Roberts et al. (1996), both maladaptive attributions and self-esteem were hypothesized to mediate the association of anxious attachment with depressive symptoms.

## 2. Method

### 2.1 Participants

Participants included 140 seventh-grade and eighth-grade students (87 girls), ages 12-15 years ( $M= 12.65$ ;  $SD= .70$ ), attending an English language high school in Montreal, Quebec. Participation was voluntary and written consents were obtained from both parents and students. Of the 358 participants contacted, consent rate was 40%, refusals 20% and no response 33%. Four consenting students were not included because of repeated absences ( $n=2$ ) or withdrawal of consent ( $n= 2$ ). Based on information obtained from a demographic questionnaire, 69% of adolescents were from two-parent homes, of which 88% were intact and 12% were reconstituted ( $n=10$  stepfather,  $n= 2$  stepmother). For single parent families, 36 adolescents lived with their mother only, and 5 with their father only. Approximately 92% of students reported primarily English Canadian or European descent (50% English Canadian, 18% French Canadian, 24% other European) or a mixture of these. Mean socioeconomic status (SES) was 31.48 ( $SD= 9.99$ ; characteristic of skilled craftsmen, clerical, and sales workers) based on Hollingshead's (1975) four factor index of social status, itself based on education and occupation of the working parent(s).

### 2.2 Measures

#### 2.2.1 Attachment

An adaptation of the Adolescent Relationship Scale Questionnaire (ARSQ; Scharfe, 1997) was used to assess adolescents' attachment styles. The 17-item ARSQ was developed by Scharfe (1997) from the parallel adult measure, the Relationship Scales Questionnaire (RSQ; Griffin & Bartholomew, 1994). Participants responded on a five-point Likert scale (1=not at all like me; 5=very much like me). For the present study, items were worded to refer to specific target figures, as permitted by Bartholomew, rather than to others in general. Each participant completed two versions of the questionnaire, one worded to refer to mother and one to father in counterbalanced order. Students with only one parent (22%) were instructed to skip the questionnaire about the other parent. Students in reconstituted families (8%) chose whether to rate their biological or step-parent. Because internal consistencies for the ARSQ and RSQ subscales are quite low (Griffin & Bartholomew, 1994), for each parent, anxiety and avoidant attachment dimensions were obtained using Feeney and Hohaus' (2001) measurement model for the 30-item RSQ. In that study, six of the parallel RSQ items loaded on the anxiety dimension and seven parallel items loaded on the avoidance dimension. Four parallel RSQ items did not load on either dimensions, and thus, were not used. In the present study, one additional ARSQ item with poor item-total correlation on the anxiety scale and another on the avoidance scale were dropped from each measure. The internal consistencies of the revised five-item anxiety dimensions (Note 1) were moderate with alphas of .72 for mother ( $M= 1.60$ ,  $SD = .72$ ) and .76 for father ( $M= 1.77$ ,  $SD= .87$ ). The internal consistencies of the revised six-item avoidance dimensions (Note 2) were moderate, with alphas of .68 for mother ( $M=2.11$ ,  $SD= .77$ ) and .77 for father ( $M= 2.52$ ,  $SD= .95$ ). Adolescents' ARSQ anxious and avoidant attachment styles with mother were negatively correlated with a three-item measure of their use of their mother for security and support in times of stress and need,  $r= -.46$ ,  $p<.001$  and  $-.34$ ,  $p<.05$  for anxious and avoidant attachment, respectively. Adolescents with more avoidant attachment to father were also less likely to report using their father for security and support,  $r= -.20$ ,  $ns$  and  $-.28$ ,  $p<.10$  for anxious and avoidant attachment, respectively. Although anxiety and avoidant scales were initially reported to be uncorrelated (Brennan et al., 1998), similar measures have been found to correlate positively and significantly in other studies (e.g., Sibley, Fisher, & Liu, 2005).

#### 2.2.2 The Children's Attributional Style Questionnaire-Revised (CASQ-R; Kaslow & Nolen-Hoeksema, 1991)

The CASQ-R is an adaptation of the Children's Attributional Style Questionnaire (Seligman, Peterson, Kaslow, Tanenbaum, Alloy, & Abramson, 1984) which is a measure of attributional style frequently used with children ages 8 to 18. The CASQ-R consists of 24 short hypothetical situations (12 positive and 12 negative) for which participants select one of two possible causal attributions. For example, a negative item is "You get a bad grade in school", and the two possible causal attributions are "I am not a good student" (i.e., internal attribution) and "Teachers give hard tests" (i.e., external attribution). Because of the low internal consistency of attributions to positive situations (.48), only attributions to negative situations were examined (.63). For the negative situations, four items tap each of three dimensions: internal-external, global-specific, or stable-unstable. Internal, stable, and global causal attributions are scored 1. Composite scores for negative events reflect the degree to which the respondent rates the events as more internal, stable, and global. The higher the composite score for negative

events, the more negative the attributional style. Although the psychometric properties of the CASQ-R indicate poor to moderate internal consistency in normal samples (.42 to .67 for negative composite scores; e.g., Nolen-Hoeksema, Girgus, & Seligman, 1992), it demonstrated criterion related validity with self-reported depressive symptoms,  $r = -.41$  (Thompson, Kaslow, & Weiss, 1998). In the present study, three items correlating poorly with the negative composite score were dropped.

### 2.2.3 Self-Description Questionnaire, General Self-Esteem (GSE) Scale (SDQ-II; Marsh, 1990)

Five items from the GSE scale of the SDQ-II (e.g., Overall I have a lot to be proud of;  $M = 4.82$ ,  $SD = .86$ ;  $\alpha = .78$ ) were used in this study. Participants rated each item on a six-point Likert-type scale (1=false, 6=true). The SDQ-II has been shown to be a psychometrically valid and reliable self-concept measure with adolescents (e.g., Keith & Bracken, 1996).

### 2.2.4 The Children's Depression Inventory (CDI; Kovacs, 1985)

The CDI is a self-report instrument measuring the level and nature of depression (i.e., negative mood, ineffectiveness, interpersonal problems, anhedonia, and low self-esteem) in youths ages 7-17. Studies have shown the CDI to be a reliable measure with high internal consistency with Cronbach alphas ranging from 0.71 to 0.89 (e.g., Kovacs, 1992). It contains 27 items on which students endorse, for each item, one of three sentences reflecting degrees of a symptom (e.g., 0 = "I am sad once in a while" or 1 = "I am sad many times" or 2 = "I am sad all the time"). As is often the custom in normative studies, because of ethical concerns by the school board, the suicide item was omitted. The total of 26 items was used with higher scores indicating more symptoms of depression ( $M = 8.21$ ,  $SD = 6.61$ ;  $\alpha = .87$ , possible range from 0 to 52). CDI scores are quite stable. Test-retest reliability of the CDI in normal children ( $M = 9.6$  years) ranges from .82 over two weeks to .66 and .67 over four and six weeks (Finch, Saylor, Edwards, & McIntosh, 1987). For the analyses involving self-esteem, the self-esteem component (four items) of the CDI was removed ( $M = 7.06$ ,  $SD = 5.44$ ;  $\alpha = .83$ , possible range from 0 to 44).

### 2.2.5 Social Desirability Scale (SDS; Strahan & Gerbasi, 1972)

A 15-item version of the Marlowe-Crowne Social Desirability Scale (Strahan & Gerbasi, 1972) was given to participants in order to assess their tendency to project favorable images of themselves. An example of an item is: "No matter who I'm talking to, I'm always a good listener". Participants were asked to indicate True or False for each of the 15 items. This abbreviated form correlates highly with the original scale (Strahan & Gerbasi, 1972), which has been established as assessing the tendency to respond with social defensiveness (Lobel & Teiber, 1994), with similar reliability coefficients, ranging from .73 to .83. The internal reliability in the present study was .66.

## 3. Procedure

Data were collected during two sessions (about 45 minutes each) arranged at the teacher's convenience. During the first session, students, taken in groups of about 20, were asked to complete questionnaires about their self-esteem and their mood for reasons unrelated to the present paper. During the second session (about seven weeks later), students, taken in groups of 10, completed the attribution and attachment questionnaires followed by a computer vignette task not part of the present study.

## 4. Results

### 4.1 Preliminary Analyses

Intercorrelations of all predictor variables and criterion variables are shown in Table 1. Because social desirability correlated significantly with most predictor and criterion variables, it was controlled for in all analyses. To examine gender and target differences in the two attachment dimensions, a 2 (sex of child)  $\times$  2 (target figures: Mother/Father) multivariate analysis of variance, with social desirability as a covariate, was conducted on the two ratings, anxiety and avoidance, with target as a within-participants factor. Using Wilk's criterion, results revealed a multivariate main effect for Target,  $F(1, 127) = 5.22$ ,  $p < .01$ , with a univariate target effect for avoidance,  $F(1, 127) = 9.76$ ,  $p < .01$ . Adolescents reported being more avoidantly attached to their father ( $M = 2.51$ ) than their mother ( $M = 2.15$ ). No significant main effects or interactions for gender were found in the two attachment dimensions.

### 4.2 Relation between Attachment and Depressive Symptoms

Hypotheses concerning predictions from attachment to depressive symptoms were tested via hierarchical multiple regressions. In the first set of analyses, gender and social desirability were first entered as control variables. Attachment dimensions, anxiety and avoidance to mother and father, were entered on the second step,

and their interactions with sex of the child on the third step. Two other sets of two-way interaction terms (Note 3) were entered on the third step (McClelland & Judd, 1993), interactions between anxious attachment to mother and father and between avoidant attachment to mother and father, and interactions between anxious and avoidant attachment to mother and between anxious and avoidant attachment to father. Only significant interactions are reported. (Note 4)

Table 1. Partial correlations between predictor variables and criterion variables, controlling for social desirability

	2	3	4	5	6	7	8 <sup>a</sup>	9 <sup>b</sup>	10 <sup>b</sup>
1. Anxiety Mother	.44***	.45***	-.01	.25**	-.12	.30***	.29***	-.20*	.07
2. Anxiety Father		.09	.46***	.21*	-.17*	.25**	.23**	-.19*	.09
3. Avoidance Mother			.20*	.10	-.14 <sup>t</sup>	.21*	.22*	-.12	.20*
4. Avoidance Father				.07	-.19*	.14	.13	-.27**	.01
5. Attributions Negative Events					-.19*	.38***	.37***	-.22**	.04
6. Self-Esteem						-.56***	-.55***	.32***	.13
7. Depression							.98***	-.38***	-.16 <sup>t</sup>
8. Depression <sup>a</sup>								-.39***	-.14 <sup>t</sup>
9. Social Desirability <sup>b</sup>									.01
10. Gender <sup>b</sup>									---

<sup>a</sup> Self-esteem component (4 items) of the CDI was removed.

<sup>b</sup> Zero-order correlations; females= 0 and males =1.

<sup>t</sup> p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001.

As shown in Table 2, as expected, girls reported more depressive symptoms than boys and adolescents with higher social desirability reported fewer depressive symptoms than those with lower social desirability,  $F(12, 117)= 5.10, p<.001$ . The attachment dimensions entered at step 2 predicted depressive symptoms significantly, with anxious attachment to mother ( $\beta= .27, sr^2= .03, p<.05$ ) as a significant unique predictor. The interaction terms entered at step 3 predicted depressive symptoms significantly. There was a significant interaction between sex and anxious attachment to mother ( $\beta= -.21, sr^2= .02, p<.05$ ). Only for girls, anxious attachment to mother predicted depressive symptoms ( $\beta= .32, p<.05; \beta= -.09, ns$  for boys). With respect to the interactions between attachment dimensions for each target, the interaction between anxiety to mother and anxiety to father was a unique predictor ( $\beta= .26, sr^2= .05, p<.01$ ). Only at high levels of anxious attachment to mother, anxious attachment to father predicted depressive symptoms significantly ( $\beta= .29, p<.01; \beta= -.13, ns$  at low levels of anxiety to mother). Adolescents reported the most depressive symptoms at high levels of anxious attachment to both mother and father ( $M= .39, SD= .29$ ; versus  $M= .26, SD= .20$  at high levels of anxiety mother and low level of anxiety father, see Figure 1).

Table 2. Hierarchical multiple regressions predicting from attachment dimensions to depressive symptoms

Step	Predictors	$R^2$	$\Delta R$	Beta Weights	
				Entry	Last Step <sup>b</sup>
1	Sex <sup>a</sup>	.17***	.17***	-.16 <sup>t</sup>	-.22**
	Social Desirability			-.38***	-.30***
2	Anxiety to Mother	.27**	.10**	.21 <sup>t</sup>	.27*
	Anxiety to Father			.10	.06
	Avoidance to Mother			.08	.10
	Avoidance to Father			.07	.04
3	Sex x Anxiety Mother	.34**	.07**	-.21*	-.21*
	Anx Mother x Anx Father			.26**	.26**

<sup>t</sup> p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001.

<sup>a</sup> Gender was a dichotomous variable with 0 and 1 representing females and males, respectively.

<sup>b</sup> Beta weights for variables in steps 1 and 2 are taken from step 3.

### Depressive Symptoms

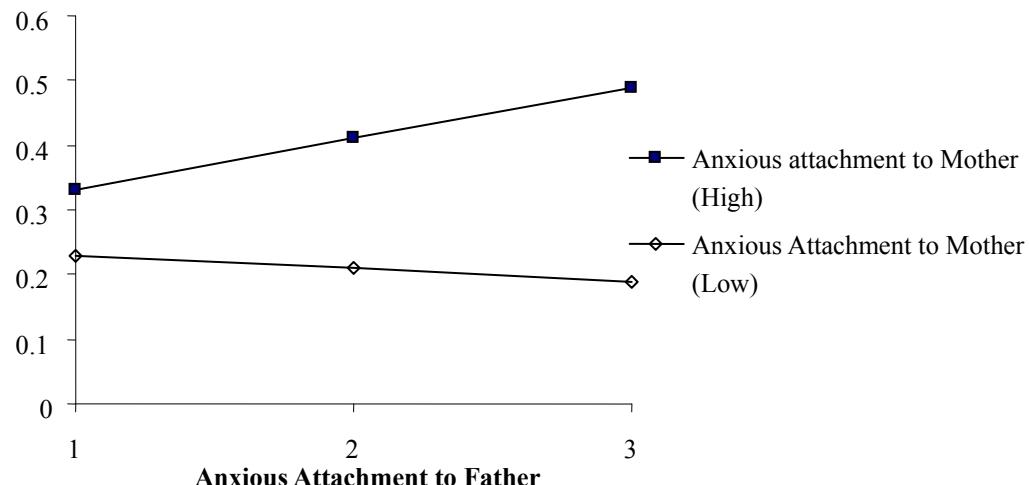


Figure 1. Anxiety to mother x anxiety to father interaction predicting depressive symptoms

Thus, as hypothesized, attachment to parents as a block, with anxious attachment to mother a unique predictor, was associated with depressive symptoms. Only for girls were anxious attachment to mother associated with greater depressive symptoms. Adolescents more anxiously attached to both parents were found to report the most depressive symptoms.

#### 4.3 Relation between Attachment and Attributions

Hypotheses concerning predictions from attachment to maladaptive attributions to negative events were tested via hierarchical multiple regressions, similar to those outlined above. No interactions were significant. Social desirability at step 1 was significant, with adolescents with higher social desirability, as expected, making fewer internal, stable, and global attributions to negative events,  $F(6, 124) = 2.91, p < .05$  (see Table 3). The attachment dimensions as a block, entered at step 2, significantly predicted attributions to negative events, with anxious attachment to mother tending to be a unique predictor ( $\beta = .20, sr^2 = .04, p < .10$ ). Anxious attachment to mother tended to be positively associated with internal, stable, and global attributions to negative events.

Table 3. Hierarchical multiple regressions predicting from attachment dimensions to attributions to negative events

Step	Predictors	Beta Weights			
		$R^2$	$\Delta R$	Entry	Last
1	Sex	.05*	.05*	.04	.02
	Social Desirability			-.22*	-.15 <sup>t</sup>
2	Anxiety to Mother	.12*	.07*	.20 <sup>t</sup>	.20 <sup>t</sup>
	Anxiety to Father			.12	.12
	Avoidance to Mother			-.00	.00
	Avoidance to Father			.02	.02

#### 4.4 Relation between Attachment and Self-esteem

Similar analyses as outlined above for attributions were conducted to assess predictions from attachment to self-esteem. As before, only significant interactions are reported. Both gender and social desirability entered at step 1 predicted self-esteem significantly,  $F(10, 119) = 5.22, p < .001$  (see Table 4). Girls reported lower self-esteem than boys and adolescents with higher social desirability reported higher self-esteem. Although the attachment dimensions entered at step 2 did not significantly predict self-esteem, the interactions between

attachment and sex of the child as a block were significant, with sex by anxious attachment to mother ( $\beta = .40$ ,  $sr^2 = .04$ ,  $p < .01$ ) a significant unique predictor. Only for girls, anxious attachment to mother was negatively associated with self-esteem ( $\beta = -.29$ ,  $p < .05$ ;  $\beta = .29$ , ns for boys).

Table 4. Hierarchical multiple regressions predicting from attachment dimensions to general self-esteem beta weights

Step	Predictors	Beta Weights			
		R <sup>2</sup>	ΔR	Entry	Last
1	Sex	.17***	.17***	.17*	.19*
	Social Desirability			.37***	.33***
2	Anxiety to Mother	.22	.04	-.05	-.29
	Anxiety to Father			-.07	-.22
	Avoidance to Mother			-.02	.00
	Avoidance to Father			-.15	-.08
3	Sex x Anxiety to Mother	.31**	.09**	.40**	.40**
	Sex x Anxiety to Father			.10	.10
	Sex x Avoidance to Mother			-.06	-.06
	Sex x Avoidance to Father			.03	.03

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

#### 4.5 Attachment and Depressive Symptoms: Attributions and Self-esteem as Mediators

The mediating roles of attributions to negative events and self-esteem in the association between attachment to parents and depressive symptoms were examined according to the criteria of Baron and Kenny (1986). As shown previously, anxious attachment to mother predicted depressive symptoms and self-esteem for girls only.

Also, although the interaction between anxious attachment to mother and father predicted depressive symptoms (see Table 2), only anxious attachment to mother, not the latter interaction predicted attributions to negative events significantly. Therefore, attributions to negative events and self-esteem were tested as a possible mediator of the association between anxious attachment to mother and depressive symptoms for girls only. First, a hierarchical multiple regression was performed to predict attributions to negative events from anxious attachment to mother for girls alone. After controlling for social desirability at step 1 ( $\Delta R^2 = .02$ ,  $F(2, 82) = 4.95$ , ns.), anxious attachment to mother predicted attributions significantly ( $R^2 = .11$ ,  $\Delta R^2 = .09$ ,  $\beta = .30$ ,  $sr^2 = .09$ ,  $p < .01$ ). Second, another hierarchical multiple regression was performed to predict depressive symptoms from attributions to negative events. After controlling for social desirability at step 1 ( $\Delta R^2 = .11$ ,  $F(2, 82) = 15.46$ ,  $p < .01$ ), attributions to negative events predicted depressive symptoms significantly ( $R^2 = .27$ ,  $\Delta R^2 = .16$ ,  $\beta = .41$ ,  $sr^2 = .16$ ,  $p < .001$ ). A hierarchical multiple regression was performed to predict depressive symptoms from self-esteem. After controlling for social desirability at step 1 ( $\Delta R^2 = .13$ ,  $F(2, 83) = 37.08$ ,  $p < .001$ ), self-esteem predicted depressive symptoms significantly ( $R^2 = .47$ ,  $\Delta R^2 = .34$ ,  $\beta = -.63$ ,  $sr^2 = .34$ ,  $p < .001$ ).

A final hierarchical multiple regression was conducted to examine the mediation effect,  $F(2, 80) = 22.62$ ,  $p < .001$  (see Table 5). The beta coefficient for anxious attachment to mother dropped from .33 ( $p < .001$ ) in step 2 to .06 (ns.) in the last step. To assess whether the reduction in the magnitude of the beta coefficients was significant, Sobel's tests were performed on the final step (Baron & Kenny, 1986). A  $z$  score of 2.18 ( $p < .05$ ) and of 3.59 ( $p < .001$ ) were found for attributions to negative events and self-esteem, respectively, indicating that the indirect path from anxious attachment to mother to depressive symptoms was statistically significant when the direct path was taken into account. Thus, both attributions to negative events and self-esteem fully mediated the association between anxious attachment to mother and depressive symptoms for girls. Attributions to negative events accounted for 3% of the variance ( $sr^2 = .03$ ,  $p < .05$ ; see Figure 2), and self-esteem accounted for 18% of the variance ( $sr^2 = .18$ ,  $p < .001$ ; see Figure 2). In other words, adolescent girls more anxiously attached to their mother were more likely to make internal, stable, and global attributions to negative events, which, in turn, was associated with greater depressive symptoms. As well, girls more anxiously attached to their mother reported

lower self-esteem, which, in turn, was associated with greater depressive symptoms. Although attributions to negative events were initially significantly correlated with self-esteem ( $r = -.19, p < .05$ ), they were not associated ( $\Delta R^2 = .01$ , n.s.) when sex and social desirability were controlled. Thus, the role of self-esteem as mediating between attributions and depressive symptoms identified by Roberts et al. (1996) could not be examined.

Table 5. Hierarchical multiple regressions examining attribution to negative events and self esteem as mediating between girls' anxious attachment to mother and Depressive symptoms

Step	Predictors	Beta Weights			
		R <sup>2</sup>	ΔR	Entry	Last
1	Social Desirability	.13***	.13***	-.36***	-.14
2	Anxiety to Mother	.24***	.11***	.33***	.06
3	Attributions Negative Events Self Esteem	.51***	.28***	.20*	.20*
				-.53***	-.53***

\*p<.05, \*\*p<.01, \*\*\*p<.001.

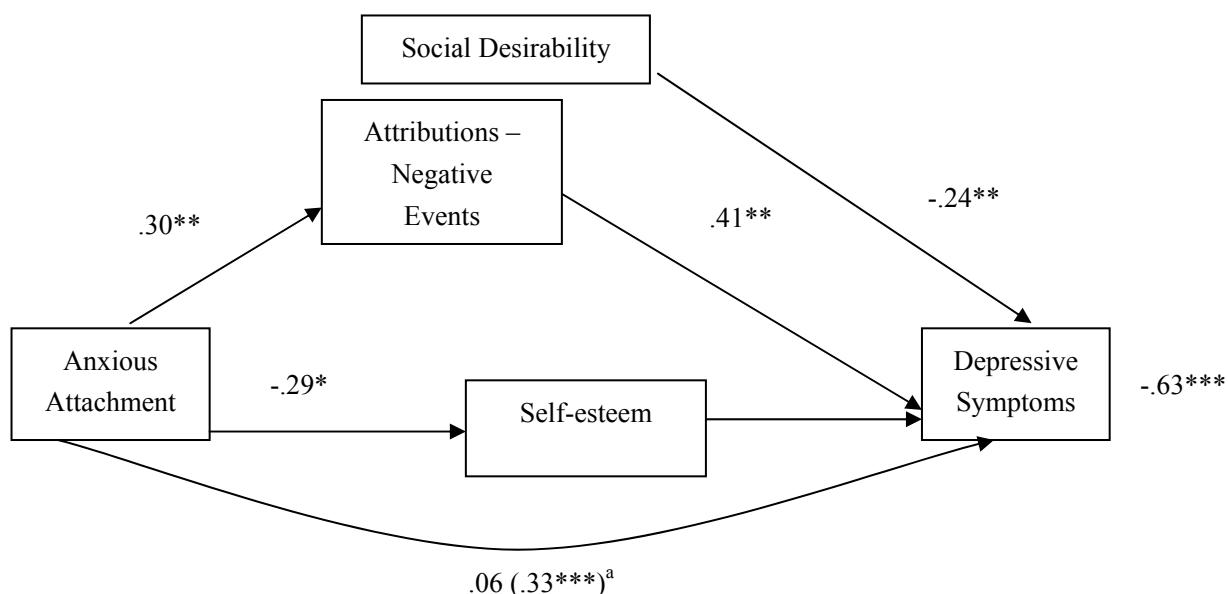


Figure 2. Attributions to negative events and self-esteem as mediators between attachment to mother and depressive symptoms for girls

Note. Beta weights shown are based on regression analyses.

<sup>a</sup> Beta weight in brackets is without the mediator.

## 5. Discussion

The present study revealed that attachment to parents, particularly to mother, is associated with early adolescents' adjustment. Anxious attachment to mother was associated with both depressive symptoms and low self-esteem for adolescent girls, and with maladaptive attributions to negative events for all adolescents. Both attributions to negative events and self-esteem fully mediated the relation between anxious attachment to mother and depressive symptoms for early adolescent girls.

### 5.1 Relation between Attachment to Parents and Adolescent Adjustment

Girls (but not boys) more anxiously attached to mother reported more depressive symptoms. Interestingly, in addition, adolescents more anxiously attached to their father reported more depressive symptoms if they were

also more anxiously attached to their mother, indicating that adolescents who were more anxiously attached to both parents were the most vulnerable to depressive symptoms.

The finding of a relation between anxious attachment and depressive symptoms is consistent with previous findings that insecure parental attachment is a risk factor for the development of depressive symptoms in early adolescence (e.g., Armsden et al., 1990; Kenny et al., 1993). The present study, however, extends those findings by highlighting the importance of anxiety about abandonment as opposed to avoidance of closeness, and the importance of attachment anxiety to mother in comparison with father. The finding of a link between anxious attachment and depressive symptoms supports the view that anxious attachment to mother constitutes a general risk factor in the development of depressive symptoms (Kobak, Sudler & Gamble, 1991). Consonant with the view that having multiple secure relationships is more developmentally enhancing than having a single secure relationship (Howes, 1999), our findings also indicate that having a more anxious attachment relationship to both parents is associated with more depressive symptoms than having an anxious attachment to only one parent, in particular to father. That is, it appears that when an adolescent is anxiously attached to mother, more anxious attachment to father increases vulnerability to depressive symptoms. The greater importance of attachment to mother than father likely reflects the greater importance of mother as a source of attachment security and support in adolescence (Markiewicz et al., 2006).

Consistent with the literature on depressive symptoms (e.g., Hankin et al., 1998), gender differences in depressive symptoms were found, with adolescent girls reporting more depressive symptoms than boys. As well, with respect to the relation between attachment and depressive symptoms, whereas Kenny et al. (1993) unexpectedly found the association to be stronger for boys than for girls, we found the association for attachment to mother to be stronger for girls than for boys. These differing findings may be due to the fact that Kenny et al. (1993) assessed security of parental attachment (i.e., affective quality of attachment, autonomy, and emotional support), whereas we distinguished both the type of insecurity and the attachment relationship with mother and father. Our results are consistent with Cooper et al.'s (1998) findings that anxiously attached adolescent girls reported greater psychological distress than anxiously attached boys and securely and avoidantly attached adolescent boys and girls. Anxiously attached adolescent girls are likely to be more vulnerable to psychological distress than anxiously attached adolescent boys for various reasons. For instance, girls are hypothesized to be subjected to more socialization pressures to conform to gender role norms (see Hill & Lynch, 1983, for a review) and are shown to respond more negatively than boys to stressful interpersonal events (e.g., Crick, 1995). Also, anxiously attached individuals are shown to have heightened stress reactivity (e.g., Feeney & Kirkpatrick, 1996), which when combined with more socialization pressures could make girls more vulnerable to distress (Cooper et al., 1998). Extending the results of previous studies showing insecure attachment to be related to low self-esteem (e.g., McCormick & Kennedy, 1994), we also found that anxious attachment to mother was associated with lower self-esteem only for adolescent girls. This result suggests that girls' views of their relationship with their mother influences girls' views of themselves. Girls' (but not boys') negative inferences about self in relation with mother can be viewed as a cognitive risk factor (Rogers, Reinecke & Setzer, 2004) contributing to their depressive symptoms. This latter finding might be due to females being more sensitive to interpersonal relationships than males (Zahn-Waxler, Cole & Barrett, 1991) and having greater tendency to take responsibility for relationship conflicts (Pomerantz & Ruble, 1998).

The finding that anxious attachment to mother is associated with negative attributions is consistent with previous findings that secure attachment with parents is associated negatively with attributions about negative events in a non-clinical sample (e.g., Armsden et al., 1990; Margolese et al., 2005) and expands earlier work by demonstrating this association at an earlier age. Future research examining the relation between attachment and attributions should explore the processes underlying the reasons for the stronger relation between anxious attachment to mother in particular (as opposed to anxious attachment to father and avoidant attachment to mother/father) and negative attributions. For instance, given that anxious adolescents report poorer self-concept and higher levels of symptomatology (e.g., higher levels of anger and hostility) than secure and avoidant adolescents do (Cooper et al., 1998), self-efficacy and emotion regulation might be possible mechanisms accounting for the strong association between anxious attachment to mother and negative attributions. Mothers might play a greater role than fathers in the development of self-efficacy and emotion regulation.

Congruent with the results of a number of studies of depression-related attributional processes (e.g., Hankin et al., 2001; Joiner & Wagner, 1995), we did not find gender differences in attributional styles. However, using a more internally reliable measure of negative attribution style, Hankin and Abramson (2002) found that girls' more negative cognitive style accounted for their higher levels of depressive symptoms when compared with boys. This discrepancy merits future exploration using this more reliable measure of children's attribution style.

### *5.2 Attachment and Depressive Symptoms: Mediating Roles of Attributions and Self-esteem*

Attributions about negative events were found to fully mediate the relation between anxious attachment to mother and depressive symptoms for girls. Consistent with Margolese et al.'s (1995) findings among middle adolescent girls, we found that early adolescent girls with more negative models of self and of their mother made more maladaptive attributions to negative events, which accounted for the association of anxious attachment to mother with greater depressive symptoms. These findings suggest that the mediating role of attributions to negative events might be one explanation for the increase in depression rates among girls from early to middle adolescence. Given that making maladaptive attributions about negative events is a mechanism associating anxious attachment with depressive symptoms for girls in both early and middle adolescence, it is important for future research to examine whether this attributional process is a stronger mediator in young adulthood where rates of depressive symptoms are higher.

Self-esteem was also found to fully mediate the relation between attachment and depressive symptoms for girls. Adolescent girls more anxiously attached to their mother reported lower self-esteem, which accounted for the association of anxious attachment to mother with greater depressive symptoms. This finding is consistent with Roberts and Monroe's (1999) hypothesis that difficulties in self-esteem regulation and maintenance are important mechanisms mediating the association between insecure attachment and depressive symptoms. With respect to our finding of this association for girls only, because of girls' tendency to personalize relationship conflicts (e.g., Ge, Lorenz, Conger, Elder Jr., et al., 1994), fear of rejection and loss by mother might be more strongly associated with lower self-worth and depressive symptoms for girls than boys. Boys are found to rate their mothers as being less important in both support and proximity seeking situations than girls (Paterson et al., 1994). Boys might, thus, be less likely to have low self-esteem and to report more depressive symptoms when anxiously attached to mother.

Attributions to negative events were uncorrelated with self-esteem when gender and social desirability were controlled. This result is inconsistent with Schwartz et al. (2000) who found that negative attributions were associated with changes in self-esteem over one year among middle to late adolescents, and also with Roberts et al (1996). Social desirability, however, was not controlled for in the analyses, which might explain the inconsistent findings. Although the relatively low reliability of the attribution measure used in the present study might also explain this lack of association, it is also possible that in early adolescence, maladaptive attributions to negative events do not yet significantly affect adolescents' self-esteem.

### *5.3 Implications for Interventions*

Our results suggest that cognitive behavioral interventions designed to change children's maladaptive attributions and self-esteem (e.g., Gillham, Reivich, Jaycox & Seligman, 1995) should consider the parent-child attachment relationship. To improve the child's view of self, of parent, and of relationships, interventions might target insecure parent-adolescent attachment relationships (in particular anxious attachment to mother), and include cognitive restructuring skills dealing with the child's attributions to events within the interpersonal context with parents. In addition to reducing children's depressotypic cognitions and depressive symptoms, interventions could also aim at facilitating the communication between the adolescent (particularly the adolescent girl) and the mother, including the adolescent's expression of negative emotions, thoughts, and conflicts, and avoiding rejection and abandonment experiences. Interventions might focus on helping the mother to be more consistently available and responsive in times of stress and need, and on helping the adolescent to explore the environment more (i.e., increase autonomy) with a parent who continues to provide a secure base.

### *5.4 Limitations*

This study relied exclusively on self-report. Nevertheless, adolescent self-report is an important source of information on the parent-adolescent attachment relationship, and on adolescent depressive symptoms, attributions, and self-esteem (Seiffge-Krenke, 1998). Moreover, the use of a measure of social desirability helps to ameliorate this limitation.

In addition, the order in which the measures were administered is a limitation of the study. The direction of causal effects cannot be determined from the present study because all the measures were administered relatively concurrently. However, results of a two-year longitudinal study suggest that self-esteem and dysphoria are more likely to result from insecure attachment than vice versa. That is, early adolescents' attachment quality predicted changes in their self-esteem and dysphoria over time, whereas initial levels of the latter two variables did not predict changes in attachment anxiety or avoidance over time (Doyle & Markiewicz, 2005).

Another limitation of the study is the measure of attachment employed. At the time of this study there was no

established multi-item measure of adolescent attachment that tapped the two established underlying dimensions of anxiety and avoidance; our adaptation of Scharfe's adaptation of Bartholomew's RSQ attempted to fill this gap. While the present study found modest evidence for reliability and validity of the two dimensions, stronger results might be obtained with newer measures such as the adaptations to mother and father of the Experiences in Close Relationships Questionnaire (Brennan et al, 1998) by other researchers (Doyle & Markiewicz, 2009), or with adaptations of the Adult Attachment Interview (Amaniti et al, 2005).

A further limitation is that the attribution measure, CASQ-R, had relatively low internal consistency, therefore increasing the chances of type II errors. However, the findings of associations of attributions with attachment and depressive symptoms are consistent with previous studies. The low consent rate also provides a limitation of generalizability of results. However, this is typical when parental consent is required. Furthermore, our findings cannot yet generalize beyond normative samples to clinical samples.

## 6. Conclusions

The findings revealed adolescents more anxiously attached to both their mother and father appeared to be the most at risk for depressive symptoms. For girls, anxious attachment to mother was associated with adolescents' emotional distress, and the link between was fully mediated by maladaptive attributions to negative events, suggesting that an anxious interpersonal relationship with mother contributes to girls' vulnerability to depressive symptoms through maladaptive attributions. As well, for adolescent girls, self-esteem was another pathway through which anxious attachment to mother was related to depressive symptoms. This study indicates the importance, when studying the relation between attachment and depressive symptoms in early adolescence, of examining the adolescent-mother and the adolescent-father attachment relationships separately, of examining anxiety separately from avoidance, and of considering both attributions and self-esteem as pathways through which anxious attachment might lead to depressive symptoms for girls.

## References

- Abramson, L. Y., Metalsky, G. I., & Alloy, L. B. (1989). Hopelessness depression: A theory-based subtype of depression. *Psychological Review*, 96, 358-372. <http://dx.doi.org/10.1037/0033-295X.96.2.358>
- Aiken, L. S., & West, S. G. (1996). *Multiple regression: Testing and interpreting interactions*. London: Sage Publications Ltd.
- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Hillsdale, NJ: Erlbaum.
- Allgood-Merten, B., Lewinsohn, P. M., & Hops, H. (1990). Sex differences and adolescent depression. *Journal of Abnormal Psychology*, 99, 55-63. <http://dx.doi.org/10.1037/0021-843X.99.1.55>
- Allgood-Merten, B., & Stockard, J. (1991). Sex role identity and self-esteem: A comparison of children and adolescents. *Sex Roles*, 25, 129-139. <http://dx.doi.org/10.1007/BF00289850>
- Armsden, G., McCauley, E., Greenberg, M., Burke, P., & Mitchell, J. (1990). Parent and peer attachment in early adolescent depression. *Journal of Abnormal Child Psychology*, 18, 683-697. <http://dx.doi.org/10.1007/BF01342754>
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182. <http://dx.doi.org/10.1037/0022-3514.51.6.1173>
- Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among adults: A test of a four category model. *Journal of Personality and Social Psychology*, 61, 226-244. <http://dx.doi.org/10.1037/0022-3514.61.2.226>
- Blatt, S. J., & Homann, E. (1992). Parent-child interaction in the etiology of dependent and self-critical depression. *Clinical Psychology Review*, 12, 47-91. [http://dx.doi.org/10.1016/0272-7358\(92\)90091-L](http://dx.doi.org/10.1016/0272-7358(92)90091-L)
- Bowlby, J. (1969/1982). *Attachment and loss: Vol. 1. Attachment*. New York: Basic Books.
- Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrated overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46-76). New York: Guilford Press.
- Bretherton, I., & Waters, E. (Eds.) (1985). Growing points in attachment theory and research. *Monograph of the Society for Research in Child Development*, 50 (1-2 Serial No. 209). Chicago: University of Chicago Press.
- Clarke, D. A., Crewdon, N., & Purdon, C. (1998). No worries, no cares: An investigation into self-reported "nondistress" in college students. *Cognitive Therapy and Research*, 22, 209-224.

- <http://dx.doi.org/10.1023/A:1018788608443>
- Cooper, M. L., Shaver, P. R., & Collins, N. L. (1998). Attachment styles, emotion regulation, and adjustment in adolescence. *Journal of Personality and Social Psychology, 74*, 1380-1397. <http://dx.doi.org/10.1037/0022-3514.74.5.1380>
- Crick, N. R. (1995). Relational aggression: The role of intent attributions, feelings of distress, and provocative type. *Development and Psychopathology, 7*, 313-322. <http://dx.doi.org/10.1017/S0954579400006520>
- Crowne, C. R., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting and Clinical Psychology, 24*, 349-354.
- Doyle, A. B., Brendgen, M., Markiewicz, D., & Kamkar, K. (2003). Family relationships as moderators of the association between romantic relationships and adjustment in early adolescence. *Journal of Early Adolescence, 23*, 316-340. <http://dx.doi.org/10.1177/0272431603254238>
- Doyle, A. B., & Markiewicz, D. (2005). Parenting, marital conflict, and adjustment from early to mid adolescence: Mediated by adolescent attachment style? *Journal of Youth and Adolescence, 34*, 97-110. <http://dx.doi.org/10.1007/s10964-005-3209-7>
- Doyle, A. B., Markiewicz, D., & Brendgen, M. (2000). Child attachment security and self-concept: Associations with mother and father attachment style and marital quality. *Merrill-Palmer Quarterly, 46*, 514-539.
- Doyle, A. B., & Markiewicz, D. (2009). Attachment Style with Father and Mother in Early Adolescence: Gender Differences and Perceived Peer Competence. *European Journal of Developmental Science, 3*, 80-93.
- Ducharme, J. L., Doyle, A. B., & Markiewicz, D. (2002). Attachment security with mother and father: associations with adolescents' reports of interpersonal behavior with parents and peers. *Journal of Social and Personal Relationships, 19*, 203-231. <http://dx.doi.org/10.1177/0265407502192003>
- Feeney, J. A., & Hohaus, L. (2001). Attachment and spousal caregiving. *Personal Relationships, 8*, 21-39. <http://dx.doi.org/10.1111/j.1475-6811.2001.tb00026.x>
- Feeney, B. C., & Kirkpatrick, L. A. (1996). The effects of early adult attachment and presence of romantic partners on physiological responses to stress. *Journal of Personality and Social Psychology, 70*, 255-270. <http://dx.doi.org/10.1037/0022-3514.70.2.255>
- Finch, Jr., A. J., Conway, F. S., Edwards, G. L., & McIntosh, J. A. (1987). Children's Depression Inventory: Reliability over repeated administrations. *Journal of Clinical Child Psychology, 16*, 339-341. [http://dx.doi.org/10.1207/s15374424jccp1604\\_7](http://dx.doi.org/10.1207/s15374424jccp1604_7)
- 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. [http://dx.doi.org/10.1207/S15327957PSPR0602\\_03](http://dx.doi.org/10.1207/S15327957PSPR0602_03)
- Ge, X., Lorenz, F. O., Conger, R. D., Elder Jr., G. H., & Simons, R. L. (1994). Trajectories of stressful life events and depressive symptoms during adolescence. *Developmental Psychology, 30*, 467-483. <http://dx.doi.org/10.1037/0012-1649.30.4.467>
- Gillham, J. E., Reivich, K. J., Jaycox, L. H., & Seligman, M. E. P. (1995). Prevention of depression in school children: Two-year follow-up. *Psychological Science, 6*, 343-351. <http://dx.doi.org/10.1111/j.1467-9280.1995.tb00524.x>
- Greenberger, E., & McLaughlin, C. S. (1998). Attachment, coping, and explanatory style in late adolescence. *Journal of Youth and Adolescence, 27*, 121-139. <http://dx.doi.org/10.1023/A:1021607627971>
- Griffin, D., & Bartholomew, K. (1994). Models of self and other: Fundamental dimensions underlying measures of adult attachment. *Journal of Personality and Social Psychology, 67*, 430-445. <http://dx.doi.org/10.1037/0022-3514.67.3.430>
- Hankin, B. L., & Abramson, L. Y. (2002). Measuring cognitive vulnerability to depression in adolescence: Reliability, validity, and gender differences. *Journal of Clinical Child and Adolescent Psychology, 31*, 491-504.
- Hankin, B. L., Abramson, L. Y., Moffitt, T. E., Silva, P. A., McGee, R., & Angell, K. E. (1998). Development of depression from preadolescence to young adulthood: Emerging gender differences in a 10-year longitudinal study. *Journal of Abnormal Psychology, 107*, 128-140. <http://dx.doi.org/10.1037/0021-843X.107.1.128>
- 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. <http://dx.doi.org/10.1023/A:1005561616506>
- Hazan, C., & Zeifman, D. (1994). Sex and the psychological tether. In K. Bartholomew & D. Perlman (Eds.), *Advances in personal relationships* (Vol. 5 pp. 151-177). London: Jessica Kingsley.
- Hill, J. P., & Lynch, M. E. (1983). The intensification of gender-related role expectations during early adolescence. In J. Brooks-Gunn & A. Peterson (Eds.), *Girls at puberty* (pp. 201-228). New York: Plenum.
- Hollingshead, A. B. (1975). Four factor index of social status. Unpublished manuscript. New Haven: Yale University, Department of Sociology.
- Howes, C. (1999). Attachment relationships in the context of multiple caregivers. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 671-687). New York: The Guilford Press.
- Ingram, R. E., Miranda, J., & Segal, Z. V. (1998). *Cognitive vulnerability to depression*. New York: Guilford Press.
- Ingram, R. E., Nelson, T., Steidtmann, D. K., & Bistricky, S. L. (2007). Comparative date on child and adolescent cognitive measures associated with depression. *Journal of Consulting and Clinical Psychology*, 75, 390-403. <http://dx.doi.org/10.1037/0022-006X.75.3.390>
- Jaccard, J., Turrisi, R., & Wan, C. K. (1990). *Interaction effects in multiple regression*. London: Sage.
- Joiner, Jr., T. E., & Rudd, M. D. (1996). Toward a categorization of depression-related psychological constructs. *Cognitive Therapy and Research*, 20, 51-68. <http://dx.doi.org/10.1007/BF02229243>
- Joiner, T. E., & Wagner, K. D. (1995). Attributional style and depression in children and adolescents: A meta-analytic review. *Clinical Psychology Review*, 15, 777-798. [http://dx.doi.org/10.1016/0272-7358\(95\)00046-1](http://dx.doi.org/10.1016/0272-7358(95)00046-1)
- Kaslow, N. J., & Nolen-Hoeksema, S. (1991). *Children's Attributional Questionnaire - Revised*. Unpublished manuscript, Emory University, Atlanta, GA.
- Keith, L. K., & Bracken, B. A. (1996). Self-concept instrumentation: A critical review. In B. A. Bracken (Ed.), *Handbook of Self Concept: Developmental, Social, and Clinical Considerations* (pp. 91-171). New York: John Wiley and Sons.
- Kenny, M. E., Moilanen, D. L., Lomax, R., & Brabeck, M. M. (1993). Contributions of parental attachments to view of self and depressive symptoms among early adolescents. *Journal of Early Adolescence*, 13, 408-430. <http://dx.doi.org/10.1177/0272431693013004004>
- Kobak, R. R., Sudler, N., & Gamble, W. (1991). Attachment and depressive symptoms during adolescence: A developmental pathways analysis. *Development and Psychopathology*, 3, 461-474. <http://dx.doi.org/10.1017/S095457940000763X>
- Kovacs, M. (1985). The children's depression inventory (CDI). *Psychopharmacology Bulletin*, 21, 995-1124.
- Lobel, T. E., & Teiber, A. (1994). Effects of self-esteem and need for approval on affective and cognitive reactions: Defensive and true self-esteem. *Personality and Individual Differences*, 16, 315-321. [http://dx.doi.org/10.1016/0191-8869\(94\)90168-6](http://dx.doi.org/10.1016/0191-8869(94)90168-6)
- Margolese, S. K. (2002). Understanding the relation between attachment and depression in adolescence. Ph.D. Thesis, Canada: Concordia University.
- Margolese, S. K., Markiewicz, D., & Doyle, A. B. (2005). Attachment to parents, best friend, and romantic partner: Predicting different pathways to depression in adolescence. *Journal of Youth and Adolescence*, 34, 637-650. <http://dx.doi.org/10.1007/s10964-005-8952-2>
- Markiewicz, D., Lawford, H., Doyle, A. B., & Haggart, N. (2006). Developmental differences in adolescents' and young adults' use of mothers, fathers, best friends, and romantic partners to fulfill attachment needs. *Journal of Youth and Adolescence*, 35, 127-140. <http://dx.doi.org/10.1007/s10964-005-9014-5>
- Marsh, H. W. (1990). *Self-description questionnaire I and II manual*. Macarthur, Australia: University of New South Wales.
- McClelland, G. H., & Judd, C. M. (1993). Statistical difficulties of detecting interactions and moderators effects. *Psychological Bulletin*, 114, 376-390. <http://dx.doi.org/10.1037/0033-2909.114.2.376>
- McCormick, C. B., & Kennedy, J. H. (1994). Parent-child attachment working models and self-esteem in

- adolescence. *Journal of Youth and Adolescence*, 23, 1-18. <http://dx.doi.org/10.1007/BF01537139>
- Metalsky, G. I., Halberstadt, L. J., & Abramson, L. Y. (1987). Vulnerability to depressive mood reactions: Toward a more powerful test of the diathesis-stress and causal mediation components of the reformulation theory of depression. *Journal of Personality and Social Psychology*, 52, 386-393. <http://dx.doi.org/10.1037/0022-3514.52.2.386>
- Mikulincer, M., & Orbach, I. (1995). Attachment styles and repressive defensiveness: The accessibility and architecture of affective memories. *Journal of Personality and Social Psychology*, 68, 917-925. <http://dx.doi.org/10.1037/0022-3514.68.5.917>
- Nolen-Hoeksema, S., Girgus, J. S., & Seligman, M. E. P. (1992). Predictors and consequences of childhood depressive symptoms: A 5-year longitudinal study. *Journal of Abnormal Psychology*, 101, 405-422. <http://dx.doi.org/10.1037/0021-843X.101.3.405>
- Orvaschel, H., Beeferman, D., & Kabacoff, R. (1997). Depression, self-esteem, sex, and age in a child and adolescent clinical sample. *Journal of Clinical Child Psychology*, 26, 285-289. [http://dx.doi.org/10.1207/s15374424jccp2603\\_7](http://dx.doi.org/10.1207/s15374424jccp2603_7)
- Paterson, J. E., Field, J., & Pryor, J. (1994). Adolescents' perceptions of their attachment relationships with their mothers, fathers, and friends. *Journal of Youth and Adolescence*, 23, 579-600. <http://dx.doi.org/10.1007/BF01537737>
- Pomerantz, E. M., & Ruble, D. N. (1998). The role of maternal control in the development of sex differences in child self-evaluative factors. *Child Development*, 69, 458-478.
- 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. <http://dx.doi.org/10.1037/0022-3514.70.2.310>
- Roberts, J. E., & Monroe, S. M. (1999). Vulnerable self-esteem and social processes in depression: Toward an interpersonal model of self-esteem regulation. In T. Joiner & J. C. Coyne (Eds.), *The interactional nature of depression*. Washington, DC: American Psychological Association. <http://dx.doi.org/10.1037/10311-006>
- Rogers, G. M., Reinecke, M. A., & Setzer, N. J. (2004). Childhood attachment experiences and adulthood cognitive vulnerability: Testing state dependence and social desirability hypotheses. *Journal of Cognitive Psychotherapy: An International Quarterly*, 18, 79-96.
- Scharfe, E. (1997). A test of Bartholomew's four category model of attachment in a clinical sample of adolescents. *Dissertation Abstracts International, Section B: The Science and Engineering*, 58, 2138.
- Schwartz, J. A. J., Kaslow, N. J., Seeley, J., & Lewinsohn, P. (2000). Psychological, cognitive, and interpersonal correlates of attributional change in adolescents. *Journal of Clinical Child Psychology*, 29, 188-198. [http://dx.doi.org/10.1207/S15374424jccp2902\\_5](http://dx.doi.org/10.1207/S15374424jccp2902_5)
- Seiffge-Krenke, I. (1998). *Adolescents' Health: A Developmental Perspective*. NJ: Lawrence Erlbaum Associates.
- Seligman, M. E. P., Peterson, C., Kaslow, N. J., Tanenbaum, R. L., Alloy, L. B., & Abramson, L. Y. (1984). Explanatory style and depressive symptoms among school children. *Journal of Abnormal Psychology*, 93, 235-238. <http://dx.doi.org/10.1037/0021-843X.93.2.235>
- Shaver, P. R., & Mikulincer, N. (2004). What do self-report attachment measures assess? In W. S. Rholes & J.A. Simpson (Eds.), *Adult attachment: Theory, research, and clinical implications* (pp. 17-55). New York: Guilford Press.
- Sibley, C. G., Fischer, R., & Liu, J. H. (2005). Reliability and validity of the Revised *Experiences in Close Relationships* (ECR-R) self-report measure of adult romantic attachment. *Personality and Social Psychology Bulletin*, 31, 1524-1536. <http://dx.doi.org/10.1177/0146167205276865>
- Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equations models. In S. Leinhart (Eds.), *Sociological methodology* (pp. 290-312). San Francisco: Jossey-Bass.
- Strahan, R., & Gerbasi, K. C. (1972). Short, homogeneous versions of the Marlowe-Crowne Social Desirability Scale. *Journal of Clinical Psychology*, 28, 191-193. [http://dx.doi.org/10.1002/1097-4679\(197204\)28:2<191::AID-JCLP2270280220>3.0.CO;2-G](http://dx.doi.org/10.1002/1097-4679(197204)28:2<191::AID-JCLP2270280220>3.0.CO;2-G)
- Thompson, M., Kaslow, N. J., & Weiss, B. (1998). Children's Attributional Style Questionnaire-Revised:

- Psychometric examination. *Psychological Assessment*, 10, 166-170.  
<http://dx.doi.org/10.1037/1040-3590.10.2.166>
- Youniss, J., & Smollar, J. (1985). *Adolescent relations with mothers, fathers, and friends*. Chicago: University of Chicago Press.
- Zahn-Waxler, C., Cole, P. M., & Barrett, K. C. (1991). Guilt and empathy: sex differences and implications for the development of depression. In J. Garber & K.A. Dodge (Eds.), *The development of emotion regulation and dysregulation* (pp. 243-272). Cambridge: Cambridge University Press.  
<http://dx.doi.org/10.1017/CBO9780511663963.012>

### Notes

Note 1. The anxiety items used were: I worry that that I will be hurt if I become too close to my mother/father; I find it difficult to trust my mother/father completely; I worry that my mother/father doesn't value me as much as I value him/her; I find that my mother/father doesn't want to be as close as I would like; I worry about having my mother/father not accept me.

Note 2. The avoidance items used were: I find it hard to count on my mother/father; I find it easy to get emotionally close to my mother/father (recoded item); I am comfortable without a close emotional relationship with my mother/father; I want to be completely emotionally close with my mother/father (recoded item); I am comfortable depending on my mother/father (recoded item); I prefer not to depend on my mother/father.

Note 3. For all analyses, when two-way interactions were significant, the relationship between the predictor and criterion variables was examined at two levels of the moderator variable (i.e., one standard deviation above the mean and one standard deviation below the mean; Aiken & West, 1996).

Note 4. Because of the difficulty of detecting interaction effects in multiple regressions, the nonsignificant interactions were dropped and only the significant and/or trend interactions were retained (Jaccard, Turrisi, and Wan, 1990).