

Adolescents' Perceptions of Primary Caregivers and Cognitive Style: The Roles of Attachment Security and Gender

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Prior research has established a link between negative early parent–child relationships and cognitive styles related to risk for depression. In attempting to explain this association, several theorists have proposed that attachment insecurity may play a key mediating role. The present study examined the relationships between adolescents' perceptions of their primary caregivers and negative cognitive styles (i.e., low self-esteem, dysfunctional attitudes, and a negative attributional style), and tested whether these relations were mediated by attachment insecurity. Results from 134 high-school students suggested that adverse parenting tends to have a more negative effect on cognitive style among girls compared to boys and that the association between parenting and cognitive style is largely mediated by attachment insecurity. Adolescents who perceive their parents as critical and perfectionistic tend to report insecure attachment styles characterized by difficulties getting close to others and fears about abandonment, and in turn, these dimensions of attachment insecurity appear to contribute to low self-esteem, dysfunctional attitudes and a negative attributional style.

KEY WORDS: parenting; attachment; cognitive; style; depression.

A number of clinical theorists posit that adverse early life experiences, particularly inadequate parenting, contribute to the development of negative cognitive styles associated with risk for depression (Abramson, Metalsky, & Alloy, 1989; Beck, Rush, Shaw, & Emery, 1979; Haines, Metalsky, Cardamone, & Joiner, 1999; Ingram, Miranda, & Segal, 1998). Bowlby's attachment theory (1969, 1973, 1980) offers a complimentary perspective by proposing that adverse interactions with primary caregivers lead children to form negative internal working models of themselves and others. These insecurely attached individuals are likely to believe that they are unworthy of care and that others are unavailable and unpredictable. The

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present study examines the relationship between adolescents' perceptions of their primary caregivers and aspects of cognitive style, specifically self-esteem, dysfunctional attitudes and attributional style, and tests whether these relations are mediated by attachment insecurity.

Beck and colleagues (Beck, 1967; Beck et al., 1979) theorize that cognitive styles that structure one's understanding of the world are formed through early learning experiences—especially those that occur within the family. According to Beck (1967), these cognitive styles form the framework for how individuals interpret and evaluate interactions (both positive and negative) during adolescence and adulthood. Consistent with this perspective, several studies have suggested that negative cognitions about one's self, such as beliefs of self-worthlessness, are associated with negative perceptions of parent-child relationships (Blatt, Wein, Chevron, & Quinlan, 1979; Ingram, Overbey, & Fortier, 2001; McCranie & Bass, 1984; Randolph & Dykman, 1998; Whisman & Kwon, 1992). For example, Whisman and Kwon (1992) found that perceptions of low parental care are associated with dysfunctional attitudes (e.g., "my value as a person depends greatly on what others think of me") and depressotypic attributional styles (i.e., attributing negative events to internal, stable and global causes). Likewise, other studies have found that reports of parental perfectionism and criticism are associated with higher levels of dysfunctional attitudes (Randolph & Dykman, 1998) and that adverse parenting is associated with low self-esteem (Garber, Robinson, & Valentiner, 1997). Although most of this research has relied on self-report measures of parenting, Jaenicke et al. (1987) found that behavioral measures of maternal criticism recorded during videotaped interaction tasks were significantly associated with the child participants' tendencies to make internal (self-blaming) attributions for negative life events. As Randolph and Dykman (1998) suggest, it may be that "parents who impose rigid or perfectionistic standards upon their children may be inadvertently influencing their children to adopt these standards for themselves, resulting in the formation of dysfunctional attitudes in the child" (p. 395). Together this body of research suggests that children internalize their parents' harsh perfectionistic standards and critical demeaning comments through the development of complementary maladaptive beliefs.

A common limitation of a number of the studies discussed above is that the associations between reports of adverse parenting and negative cognitive style could have been driven by current affective distress. In other words, affective distress could have led to negative biases in the recall of parenting behaviors and to the subsequent endorsement of more negative statements on measures of cognitive style. To address this issue, Ingram et al. (2001) tested the associations between parenting and cognitions after statistically controlling for affective symptomatology. Even with this stringent control, these investigators found that maternal care was a significant predictor of both positive and negative cognitions. Further, individuals who reported positive maternal bonding experiences also reported more positive and less negative automatic thoughts than those who reported poor maternal bonding. Likewise, Brewin, Firth-Cozens, Furnham, and McManus (1992) found that higher levels of self-criticism in adulthood were related to retrospective reports of poor parent-child relationships (particularly with mothers) even after controlling for mood-state and social desirability.

Although several studies have demonstrated links between perceptions of adverse parenting experiences and negative cognitive styles in offspring, few studies have examined possible mediators that may account for these relationships. A number of clinical theorists have suggested that attachment style may play an important role (Blatt & Homann, 1992; Bowlby, 1980; Roberts & Monroe, 1999). Bowlby's (1969, 1973, 1980) attachment theory proposes that psychological well-being is determined in part by individual differences in the quality of early parent-child attachment relationships. From their early attachment relationships with caregivers, children develop general expectations about both themselves and others. More specifically, one's working model of self represents one's internalized sense of self-worth; and one's working model of others represents one's general expectations about the availability, dependability, and supportiveness of others. These mental representations, or internal working models of self and others, then form the basis for the individual's attachment style throughout later life.

Children whose caregivers are unavailable and inattentive during childhood, are likely to develop negative internal working models of both themselves and others. As these children mature, they may expect that they themselves are not worthy of care, and that others cannot be relied upon to provide care consistently or unconditionally. In contrast, children who perceive their primary caregivers as being responsive and available during early development are likely to internalize a sense of their own self worth and will expect that others will attend to their needs (see Gerlsma, Buunk, & Mutsaers, 1996). In their review of the empirical literature examining the role of parent-child interactions in the etiology of depression, Blatt and Homann (1992) concluded that children internalize both secure and disturbed patterns of their relationships with caregivers as mental representations or internal working models of attachment.

Building upon this general model, a number of studies have demonstrated that attachment insecurity is associated with dysfunctional attitudes (Reinecke & Rogers, 2001; Roberts, Gotlib, & Kassel 1996; Whisman & McGarvey, 1995) and low self-esteem in adults (Roberts et al., 1996) as well as adolescents (Garber et al., 1997). In a series of studies conducted with college students, Roberts et al. (1996) found that the relation between adult attachment and depressive symptoms was almost entirely mediated by dysfunctional attitudes and low self-esteem, even after initial depressive symptoms and neuroticism were controlled. Relatedly, Whisman and McGarvey (1995) examined the association between caregiver attachment, negative cognitions (e.g., dysfunctional attitudes and depressotypic attributional style), and depressive symptomatology. Findings indicated that perceived attachment was related to both dysfunctional attitudes and dysphoria in adulthood. Moreover, the association between attachment and dysphoria was mediated in part by dysfunctional cognitions regarding performance evaluation and approval of others.

Although there appear to be clear links between adverse parenting, insecure attachment, dysfunctional cognitions, and dysphoria, these relations may operate differently between male and female adolescents. Interestingly, in samples of pre-pubescent children depressive diagnoses are more prevalent in boys than girls (Nolen-Hoeksema, 1990), whereas during early adolescence females begin to report more depressive symptoms than their male counterparts (Kandel & Davies, 1986;

Cole et al., 2002). Several theorists have proposed that psychosocial factors that give rise to differences in cognitive style may help account for the sex differences in depression that begin to emerge in adolescence and continue through adulthood. Nolen-Hoeksema (1990) and others (Hankin & Abramson, 2001) have suggested that women are more likely than men to demonstrate dysfunctional or maladaptive cognitive styles that increase their vulnerability to depression. These cognitive styles in part may originate from the internalized expectations one receives from parents and other adults in childhood. During the socialization process that occurs in childhood, boys are encouraged to be more independent and outgoing (Gurian, 1987), while girls are socialized to be more passive, dependent, helpless, and non-assertive (Rothblum, 1983). Likewise, parents report that they expect more from their sons, have higher aspirations for them, and push them to achieve higher goals than their daughters (see Nolen-Hoeksema, 1990). In contrast, parents tend to socialize their daughters to attribute their successes in life to chance or luck, and to blame themselves for their failures (see Brems, 1995). Young girls, then, may internalize parental messages that contribute to low self-esteem, low mastery, and low self-efficacy (Nolen-Hoeksema, Larson, & Grayson, 1999), and that subsequently increase their vulnerability to depression.

The present study examined the relationship between adolescents' perceptions of their primary caregivers and negative cognitive styles involving low self-esteem, dysfunctional attitudes, and a negative attributional style. Research examining reports of parent-child relations and cognitive style during adolescence complements studies that rely solely on the retrospective accounts of adults, which may be more heavily influenced by mood-congruent memory biases or impairments due to psychopathology (Brewin, Andrews, & Gotlib, 1993). Our study minimized bias related to the passage of time by utilizing an adolescent sample instructed to report on their recent relationships with their primary caregivers. Furthermore, we expanded upon previous research by testing whether the parenting-cognitive style association was mediated by attachment insecurity. Given recent evidence suggesting that perceptions of parental criticism and perfectionism play a particularly prominent role in shaping negative cognitions and creating risk for depressive symptoms (Randolph & Dykman, 1998), we focused on these aspects of adverse parenting. Finally, we tested whether there would be gender differences in the effects of adverse parenting on cognitive style and attachment security. In particular, we hypothesized that perceptions of adverse parenting would have stronger associations with measures of cognitive style among girls compared to boys. Likewise, we posited that the relations among perceptions of parenting and each of the attachment dimensions would be stronger among the female adolescents in our sample compared to the males.

METHOD

Procedure

Participants were recruited from a rural high school located in the Northeast United States with a total enrollment of approximately 480 students in grades nine

through twelve. After obtaining parental permission and the participants' informed consent to participate in the study, the students were administered a battery of questionnaires during an activity period in the high school cafeteria by the principal investigator and school personnel trained in the administration of the questionnaires.³ The principal investigator and school personnel circulated throughout the cafeteria and answered students' questions when they arose. As an incentive to participate, each participating student was entered into a lottery for a cash prize of \$50. In addition, every student in the homeroom class that achieved the highest participation percentage was awarded gift certificates for pizza from a local restaurant.

Pilot-testing suggested that participants would need approximately 35 minutes to complete the battery, so a 40-minute activity period was used. At the conclusion of the session, participants were provided with a debriefing statement that outlined the hypotheses and rationale of the study. Also included in the debriefing statement was a referral listing of appropriate sources the students could contact if they wished to explore emotional issues.

Participants

Participants in the study included 134 adolescents (77 female). The mean age of the students in the sample was 16.2 years ($SD = 1.04$). The grade distribution of the students in the sample was as follows: grade 9 (23.1%), grade 10 (23.9%), grade 11 (44.0%), and grade 12 (9.0%). The ethnic composition of the sample was largely homogenous. Ninety-six percent of the adolescents identified themselves as being Caucasian, 2% reported themselves as Native American, 1% indicated they were Hispanic American, and 1% identified their ethnicity as something other than the listed categories. The majority of the participants indicated that their parents were married (69%). Twenty-five percent reported that their parents were divorced or separated, 3% indicated that their parents were never married, and 3% reported that their parents' relationship was something other than the listed categories.

Measures

Primary Caregiver

Participants were instructed to identify their primary caregiver from an assortment of categories (biological mother, biological father, step-mother, step-father, adopted mother, adopted father, or other). A primary caregiver was defined as the family member the adolescent considered to be the most involved in taking care of their needs growing up, or the person the adolescent felt they could count on or talk to when they had a problem, or when they needed help with something. The majority of participants identified their biological mother as their primary caregiver (74%). Seventeen percent of the sample reported their biological father and 2%

³An in-service training session was conducted by the principal investigator prior to the date of the study. This was done in order to acquaint teachers with the study procedures and questionnaires, and to address any questions or concerns they had about the investigation.

identified either their step-mother or step-father. Approximately 3% reported that their adoptive mother or father was their primary caregiver, and 4% indicated that another family member not listed was most involved in taking care of their needs growing up.

Modified Socially Prescribed Perfectionism Scale (MPS)

To assess perfectionistic parenting, we used Randolph and Dykman's (1998) modified version of the Socially-Prescribed Perfectionism subscale of the Multi-dimensional Perfectionism Scale (Hewitt & Flett, 1991). Randolph and Dykman (1998) modified the original 15-item scale to specifically reflect parental perfectionistic standards. Examples of the items included on the MPS are statements such as, "My primary caregiver expects me to succeed at everything I do"; "I find it difficult to meet my primary caregiver's expectations of me." Participants responded to each of the 15 items using a 7-point Likert scale (1 = strongly disagree; 7 = strongly agree). Responses were coded so that higher MPS scores reflected more perfectionistic parenting. In the present study, the Cronbach alpha for the MPS was .88.

Critical Parenting Inventory (CPI)

The CPI (Randolph & Dykman, 1996) is a 25-item scale that assesses the frequency of critical and supportive statements made by primary caregivers when speaking to their children. The scale consists of 13 critical and 12 non-critical (or supportive) statements. Participants were asked to rate the degree to which their primary caregiver said these things or similar things to them when they were dealing with a difficult situation. Participants responded using a 6-point Likert scale (1 = never says these (or similar) things to me; 6 = always says these (or similar) things to me). Examples of critical items include, "You'll never be good at anything"; "You should have done a lot better"; "Can't you do anything right?." Examples of supportive items include, "Just give it your best shot"; "It's fine to make mistakes"; "Just try your best and don't worry about how well you do." The CPI is coded so that higher scores reflect more critical parenting. In the present study, the CPI had a Cronbach alpha of .92.

Attachment Security

To assess adolescents' general level of attachment security, Collins and Read's (1990) 18-item dimensional inventory of adult attachment was used. Participants were instructed to rate how each statement generally described them in terms of their important relationships with people like family members, friends, and romantic partners using a 5-point scale of self-descriptiveness (1 = very slightly or not at all; 5 = extremely). Wording on several items was altered slightly so that they could be answered in response to important relationships in general as opposed to only romantic relationships and in order to increase their relevance to an adolescent sample. Although initial research conducted with adult samples suggested that this scale is composed of three factors (Collins & Read, 1990), more recent work has

suggested a two-factor structure for adult attachment (Brennan, Clark, & Shaver, 1998). The factor structure of adolescent attachment using the Collins and Read (1990) scale has not been reported to date.⁴

In order to determine the factor structure of this scale in our adolescent sample, a maximum likelihood factor analysis with oblique rotation was conducted. Four factors with eigenvalues greater than 1 emerged. Two of these factors, however, were uninterpretable because each of them was comprised of only one item. The two remaining factors accounted for 41.1% of the total variance. Factor scores were calculated by summing items (unit weighting) that loaded .5 or greater on a single scale. Factor 1, labeled "Anxious," consisted of 6 items ($\alpha = .81$) that reflected concerns about abandonment. Items comprising the Anxious factor included: "I often worry about being abandoned," "My desire to bond or connect with others sometimes scares people away," "I often worry that others do not really love or care about me," "People are never there when you need them," "I often worry that others will not want to stay with me," and "I know that others will be there when I need them (reverse scored)." The Anxious factor accounted for 29.3% of unique variance. Factor 2, labeled "Discomfort with Intimacy," was composed of 4 items ($\alpha = .76$) that reflect discomfort being close to others. Items that loaded on the Discomfort factor were "I am nervous when anyone gets too close to me," "Often others want me to be more intimate or close than I feel comfortable being," "I don't like getting close to others," and "I often worry about someone getting too close to me." Higher scores indicate greater discomfort getting close to others and an avoidance of close relationships. The Discomfort with Intimacy factor accounted for 11.8% of unique variance.

Self-Esteem

The Rosenberg Self-Esteem Scale (RSE) is a measure of global self-regard that consists of 10 items, such as "I take a positive attitude toward myself" (RSE; Rosenberg, 1965). Participants responded to items by using a 5-point Likert scale that ranged from strongly agree (1) to strongly disagree (5). Higher scores indicated higher global self-esteem. In the present sample, coefficient alpha was .89 for the RSE.

Dysfunctional Attitudes

The Dysfunctional Attitude Scale (DAS; Weissman & Beck, 1978) is a 40-item measure that assesses attitudes and beliefs that are thought to predispose individuals to depression. Items such as "I cannot be happy unless most people I know admire me," and "If I fail partly, it is as bad as being a complete failure" were rated on a 7-point scale, ranging from totally agree (1) to totally disagree (7). Total scores can range from 40 to 280, with higher scores indicating greater endorsement of maladaptive beliefs. The coefficient alpha in the present sample was .89 for the DAS.

⁴In our sample, the coefficient alphas for Collins and Read's anxiety about abandonment, comfort with closeness and comfort depending on others subscales were .64, .68, and .74 respectively.

Attributional Style

The Children's Attributional Style Questionnaire (CASQ; Kaslow, Tannebaum, & Seligman, 1978) is a 48-item forced-choice measure of explanatory style (i.e., the three dimensions of internality, stability, and globality). Each item presents a hypothetical event and two possible explanations for why that event occurred. Participants were instructed to imagine the event happening to them, and then choose which of the two explanations best described why the imagined event happened to them. Half of the 48 events are positive, and the other 24 items are negative. The following is an example of an item from the CASQ:

- You get an "A" on a test.
A. I am smart
B. I am smart in that subject.

In each item, one causal dimension was varied while the other two were held constant. In this study, a negative composite score was derived by adding across the three dimensions for the 24 items describing negative events. Higher scores indicated more depressotypic thinking. The coefficient alpha in the present sample was .47 for the negative composite. Similar modest levels of internal consistency ($\alpha < .50$) have been reported in a number of studies using this measure (Dixon & Ahrens, 1992; Hilsman & Garber, 1995; Robinson, Garber, & Hilsman, 1995).

Depressive Symptomatology

The Inventory to Diagnose Depression (IDD; Zimmerman & Coryell, 1987; Zimmerman, Coryell, Corenthal, & Wilson, 1986) was used to measure the severity of depressive symptomatology. The IDD has been shown to be a stable and valid measure of depressive symptomatology and a sensitive diagnostic instrument in studies conducted with inpatients (Zimmerman et al., 1986), college students (Goldston, O'Hara, & Schwartz, 1990), and adolescents (McFarlane, Bellissimo, & Norman, 1995). The IDD uses thresholds to determine the presence/absence of depressive symptoms, and each item is rated for severity as well as duration. For this study, a continuous measure of current depressive symptomatology was calculated by summing items on the IDD. Goldston et al. (1990) reported that IDD total scores correlate highly with the Beck Depression Inventory ($r = .81$) and the Center for Epidemiological Studies-Depression Scale ($r = .81$). In the present sample, coefficient alpha was .88 for the IDD.

RESULTS

Preliminary Analyses

The means, standard deviations, and correlations among the measures used in the study are presented in Table I. As can be seen, our measure of critical parenting had statistically significant, albeit small, correlations with self-esteem ($r = -.22$) and

Table I. Means, Standard Deviations, and Intercorrelations for Primary Measures

Measures	Mean	SD	<i>n</i>	1	2	3	4	5	6	7	8
1. CPI	63.8	20.8	134	—							
2. MPS	49.2	17.1	134	.70**	—						
3. ANX	13.4	5.51	134	.42**	.46**	—					
4. DISC	15.7	3.86	134	-.41**	-.45**	-.52**	—				
5. RSE	35.7	8.49	134	-.22**	-.21**	-.56**	.41**	—			
6. IDD	14.1	10.7	134	.20*	.26**	.52**	-.46**	-.61**	—		
7. DAS	133.9	32.4	134	.31**	.44**	.56**	-.38**	-.55**	.46**	—	
8. CASQ 4.8	2.2	134	.15	.14	.34**	-.36**	-.46**	.38**	.38**	.38**	—

Note. CPI = Critical parenting inventory; MPS = Modified socially prescribed perfectionism scale; ANX = Anxiety dimension of the attachment security scale; DISC = Discomfort with intimacy dimension of the attachment security scale; RSE = Rosenberg self-esteem scale; IDD = Inventory to diagnose depression score; DAS = Dysfunctional attitude scale; CASQ = Negative composite of the attributional style questionnaire.

* $p < .05$; ** $p < .01$.

dysfunctional attitudes ($r = .31$). Likewise, perceptions of perfectionistic parenting were correlated with self-esteem ($r = -.21$) and dysfunctional attitudes ($r = .44$). Correlations between both measures of parenting and negative attributional style were not statistically significant for the sample as a whole. Adolescents who described primary caregivers as more critical and perfectionistic tended to have more negative cognitive styles characterized by low self-esteem and dysfunctional attitudes. In addition, perceptions of critical and perfectionistic parenting were moderately correlated with both the Anxious and Discomfort with Intimacy dimensions of attachment, which in turn were moderately associated with each of the measures of cognitive style. Age was not significantly correlated with any of the measures of parenting, attachment, or cognitive style.

Gender Analyses

Gender differences were found on three of the measures administered in the study. Specifically, females reported lower self-esteem than males ($M = 33.6$ vs. $M = 38.4$), $t(132) = 3.38$, $p < .01$. Male adolescents tended to report their primary caregivers as more critical ($M = 68.5$) compared to female adolescents' reports ($M = 60.3$), $t(132) = 2.30$, $p < .05$, and finally, males tended to report their primary caregivers as more perfectionistic ($M = 53.5$) compared to females ($M = 46.1$), $t(132) = 2.52$, $p < .05$. No other gender differences were found (all t 's < 1.16).

Of greater interest, gender moderated the associations between perceptions of parenting and cognitive style. Controlling for severity of depressive symptoms, as well as the main effects of gender and parenting, statistically significant Gender \times Critical Parenting interactions were found for self-esteem $pr = -.21$, $t(129) = 2.38$, $p < .05$, dysfunctional attitudes, $pr = .30$, $t(129) = 3.62$, $p < .001$, and negative attributional style, $pr = .22$, $t(129) = 2.53$, $p < .05$. Likewise, statistically significant Gender \times Perfectionistic Parenting interactions were found in regression analyses predicting dysfunctional attitudes, $pr = .31$, $t(129) = 3.71$, $p < .001$, and negative attributional style, $pr = .24$, $t(129) = 2.79$, $p < .01$, but not self-esteem, $pr = -.09$,

Table II. Correlations Among Perceptions of Parenting, Attachment, and Cognitive Style as a Function of Gender

Measures of cognitive style and attachment	Females	Males	Z score	p value
Critical parenting inventory (CPI)				
CASQ	.38***	-.20	3.34	.001
RSE	-.52****	.05	3.47	.001
DAS	.60****	-.11	4.45	.001
Anxious	.60****	.16	2.95	.005
Discomfort	-.50****	-.34*	1.08	<i>ns</i>
Modified socially prescribed perfectionism scale (MPS)				
CASQ	.34***	-.15	2.80	.005
RSE	-.36***	-.19	1.02	<i>ns</i>
DAS	.67****	.15	3.65	.001
Anxious	.59****	.31*	1.98	.05
Discomfort	-.51****	-.42***	0.64	<i>ns</i>

Note. CPI = Critical parenting inventory, MPS = Modified socially prescribed perfectionism scale, CASQ = Negative composite of the attributional style questionnaire, RSE = Rosenberg self-esteem scale, DAS = Dysfunctional attitude scale, ANX = Anxiety dimension of the attachment security scale, DSC = Discomfort with intimacy dimension of the attachment security scale.

* $p < .05$; ** $p < .01$; *** $p < .005$; **** $p < .001$.

$t(129) = 0.98$, $p = .33$. As can be seen in Table II, the zero-order correlations between perceptions of parenting and cognitive style were consistently larger among females relative to males.

In a similar manner, the Gender \times Parental Perfectionism interaction was a statistically significant predictor of anxious attachment, $pr = .19$, $t(129) = 2.17$, $p < .05$, while the Gender \times Parental Criticism interaction was a marginally significant predictor of anxious attachment, $pr = .16$, $t(129) = 1.86$, $p < .07$. As seen in Table II, the correlations between parenting and anxious attachment were larger in females relative to males. In contrast, gender did not moderate the associations between parenting and the attachment factor representing discomfort with intimacy (p 's $> .40$).

Testing the Hypothesized Mediation Models

The hypothesized path models suggest that the associations between perceptions of parenting and cognitive style would be mediated by attachment style. These models were tested using structural equation modeling with manifest variables using AMOS (Arbuckle, 1997) with maximum likelihood estimation. Separate analyses were conducted for each of the three measures of cognitive style (self-esteem, dysfunctional attitudes, negative attributional style). In each model, critical and perfectionistic parenting were treated as exogenous variables, whereas attachment and cognitive style were treated as endogenous variables. Directed paths from perfectionistic and critical parenting to anxious attachment and discomfort with intimacy were left free and were estimated by the program, whereas paths from parenting to cognitive style were initially fixed at zero. Paths from anxious attachment and discomfort with intimacy to cognitive style were left free and were estimated by the program.

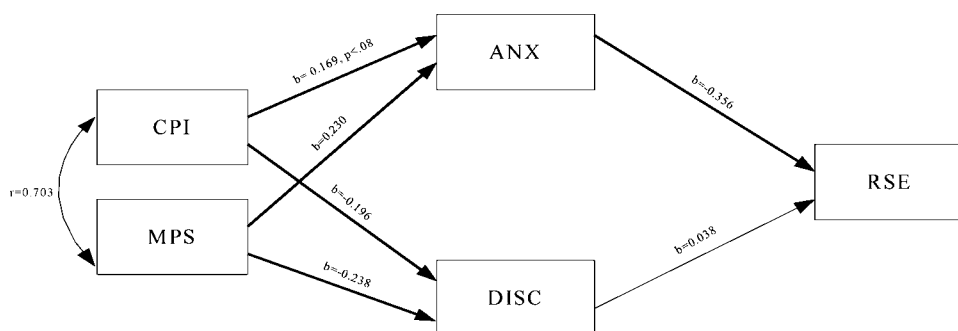


Fig. 1. Obtained path model of relations between perceptions of parenting, attachment, and self-esteem. Thinner lines represent paths that were not statistically significant at $\alpha < .05$. CPI = Critical parenting inventory, MPS = Modified socially prescribed perfectionism scale, ANX = Anxiety dimension of the attachment security scale, DISC = Discomfort with intimacy dimension of the attachment security scale, RSE = Rosenberg self-esteem scale.

In order to provide a conservative test of the models, severity of depressive symptoms was also treated as an exogenous variable with directed paths to each of the attachment factors and cognitive style. This procedure has the effect of statistically controlling for shared variance between measures resulting from depressive symptoms. Furthermore, because gender differences were found in the preliminary analyses, gender was also included as an exogenous variable.⁵

Given that the two dimensions of attachment (Anxious and Discomfort with Intimacy) were derived from the same questionnaire, it was not surprising that initial modeling indicated that the error terms of these two variables were strongly correlated. Consequently, we allowed these error terms to correlate in each of the analyses reported below. Figures 1–3 portray the obtained models. In order to simplify their presentation, the control variables gender and depressive symptoms, as well as the error terms, are not portrayed. Standardized path coefficients are presented.

Five goodness-of-fit indices were examined: a standard chi-square statistic, the Goodness of Fit Index (GFI), the Adjusted Goodness-of-Fit Index (AGFI), the Normed Fit Index (NFI), and the Root Mean Square Error of Approximation (RMSEA). A non-significant chi-square indicates that the expected or hypothesized variance-covariance matrix and the observed or actual variance-covariance matrix are similar and that the model provides a good fit to the data. For the GFI, AGFI, and the NFI the closer the values are to 1.00 the better the fit; a value of 1.00 means that the hypothesized model exactly reproduces the observed data (Bohrnstedt & Knoke, 1994) whereas RMSEA values less than .05 represent excellent fit. In AMOS, individual path coefficients are tested with the Critical Ratio (CR) statistic. Values greater than 1.96 are statistically significant at $p < .05$.

⁵Although the gender interactions reported above suggest that structural models may differ between boys and girls, our sample size (57 males, 77 females) was not sufficient for conducting either separate analyses on each gender or a multigroup analysis.

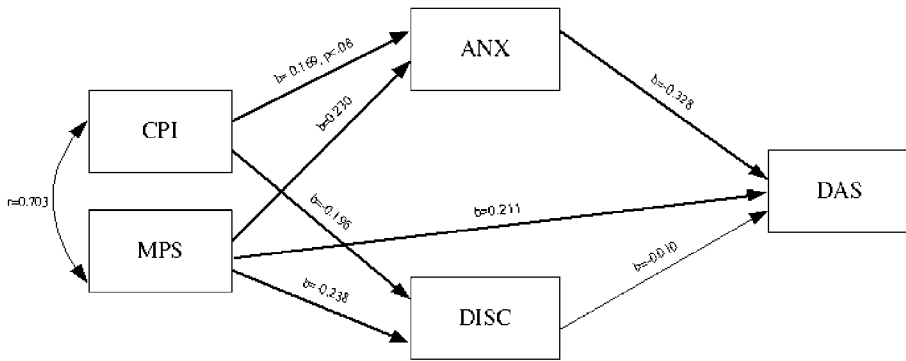


Fig. 2. Obtained path model of relations between perceptions of parenting, attachment, and dysfunctional attitudes. Thinner lines represent paths that were not statistically significant at $\alpha < .05$. CPI = Critical parenting inventory, MPS = Modified socially prescribed perfectionism scale, ANX = Anxiety dimension of the attachment security scale, DISC = Discomfort with intimacy dimension of the attachment security scale, DAS = Dysfunctional attitude scale.

Self-Esteem

All five of the fit indices suggested an excellent fit of the hypothesized model to the data. The chi-square statistic was not significant, $\chi^2 = (2, n = 134) = 1.43, p = 0.49$, and the values of the GFI, AGFI, NFI, and RMSEA were 0.997, 0.957, 0.996, and 0.000, respectively. As seen in Fig. 1, all hypothesized paths were either statistically significant or demonstrated marginal trends with the exception of the path directed from the Discomfort with Intimacy attachment factor to self-esteem ($CR = 0.52, p = .60$).

In order to test for possible direct effects between perceptions of parental criticism and perfectionism and self-esteem, the paths between parenting and self-esteem were freed and estimated (each in separate analyses). Neither path was statistically significant; $CR = 0.70, p = .48$, in the case of parental criticism, and

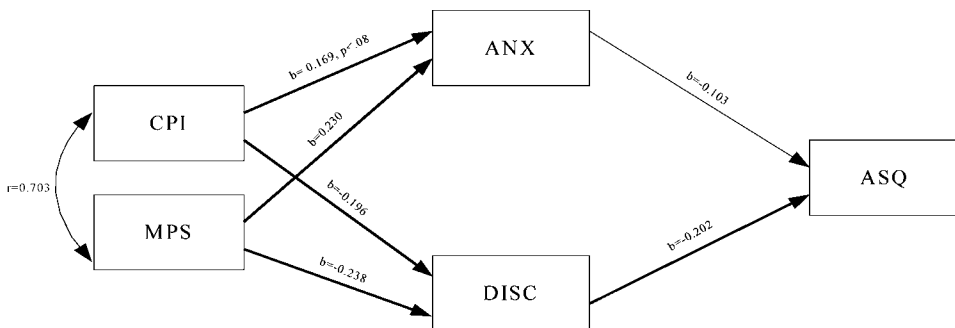


Fig. 3. Obtained path model of relations between perceptions of parenting, attachment, and negative attributional style. Thinner lines represent paths that were not statistically significant at $\alpha < .05$. CPI = Critical parenting inventory, MPS = Modified socially prescribed perfectionism scale, ANX = Anxiety dimension of the attachment security scale, DISC = Discomfort with intimacy dimension of the attachment security scale, CASQ = Negative composite of the attributional style questionnaire.

$CR = 0.38, p = .70$, in the case of parental perfectionism. Furthermore, chi-square difference tests comparing the original model to these models indicated that freeing these parameters did not result in an improved model fit, $\chi^2 = (1, n = 134) = 0.49, p > .30$, in the case of parental criticism, and $\chi^2 = (1, n = 134) = 0.14, p > .50$, in the case parental perfectionism. These nonsignificant chi-square values indicate that the models that included this extra free parameter (directed paths from parenting to self-esteem) did not provide a statistically significant better fit than the more parsimonious model that did not include these paths.

Dysfunctional Attitudes

Although the chi-square statistic was significant, $\chi^2 = (2, n = 134) = 7.03, p < .05$, the other fit indices indicated a generally adequate fit of this model to the data; the values of the GFI, AGFI, NFI and RMSEA were 0.985, 0.797, 0.977, 0.138 respectively. All hypothesized paths were either statistically significant or marginally significant with the exception of the path directed from the Discomfort with Intimacy attachment factor to dysfunctional attitudes ($CR = 0.90, p = .37$).

In contrast to the analysis of self-esteem, modification indices indicated that the model would be improved by freeing the directed path from perceptions of perfectionistic parenting to dysfunctional attitudes. This resulted in an improved model fit, $\chi^2 = (1, n = 134) = 0.52, p = 0.47$, and the values of the GFI, AGFI, NFI and RMSEA were 0.999, 0.969, 0.998, and 0.000. This new path was statistically significant, $\beta = .211, CR = 2.59, p < .01$. In addition, a statistically significant chi-square difference test, $\chi^2 = (1, n = 134) = 6.51, p < .05$, indicated that freeing the path between perfectionistic parenting and dysfunctional attitudes resulted in an improved model fit. In contrast, the directed path between parental criticism and dysfunctional attitudes was not statistically significant ($CR = 0.91, p = .36$) and a chi-square difference test indicated that freeing this parameter did not result in an improved model fit, $\chi^2 = (1, n = 134) = 0.80, p > .30$. Figure 2 presents the revised model.

Negative Attributional Style

All five of the fit indices suggested an excellent fit of the hypothesized model to the data. The chi-square statistic was not significant, $\chi^2 = (2, n = 134) = 1.38, p = .50$, and the values of the GFI, AGFI, NFI and RMSEA were 0.997, 0.959, 0.995, and 0.000 respectively. As seen in Fig. 3, all hypothesized paths were statistically significant with the exception of the path directed from Anxious attachment to negative attributional style ($CR = 1.05, p = .30$).

In order to test for possible direct effects between perceptions of parental criticism and perfectionism and attributional style, the paths between parenting and attributional style were freed and estimated. Neither was statistically significant, $CR = 0.47, p = .64$, in the case of parental criticism, and $CR = 1.15, p = .26$, in the case of parental perfectionism. Furthermore, chi-square difference tests indicated that freeing these parameters did not result in an improved model fit, $\chi^2 = (1, n = 134) = 0.22, p > .50$, in the case of parental criticism, and $\chi^2 = (1, n = 134) = 1.32, p > .20$, in the case of parental perfectionism.

DISCUSSION

The present study sought to clarify the mechanisms that underlie the association between adolescents' perceptions of their primary caregivers and negative cognitive styles related to risk for emotional distress. In particular, this research explored a model positing that the relationship between perceptions of adverse parenting and cognitive style is mediated by attachment insecurity. Based upon the work of Beck (1967, 1979), Blatt and Homann (1992), and Bowlby (1969, 1973, 1980), we hypothesized that adolescents who perceived their parents as being more critical and perfectionistic would report more insecure attachment styles, which in turn would contribute to various aspects of negative cognitive style, such as low self-esteem, dysfunctional attitudes and negative attributional style. We also explored whether the relationship between perceptions of parenting and cognitive style would vary across males and females.

Perceptions of Parenting, Attachment, and Cognitive Style

Results from structural equation modeling provided support for our general model. While perceptions of parental criticism and perfectionism were associated with lower self-esteem, and dysfunctional attitudes in bivariate analyses, these associations were for the most part mediated by attachment security. In other words, our data are consistent with the possibility that perceptions of adverse parenting increase risk for negative cognitive styles through their effects on attachment security. Adolescents who reported that their parents made frequent critical and demeaning comments about them or expected them to excel in all aspects of their lives had heightened concerns about potential abandonment and discomfort becoming close to others (though the associations between parental criticism and attachment were at the trend level). These aspects of attachment insecurity were directly associated with lower self-esteem, dysfunctional attitudes and negative attributional style, and after controlling for attachment, critical and perfectionistic parenting (for the most part) no longer predicted cognitive style. Importantly, these effects were obtained while statistically controlling for depressive symptoms and gender. The one exception to this pattern of mediation involved dysfunctional attitudes. Here perceptions of parental perfectionism made both indirect (mediated through attachment) and direct contributions. Adolescents who reported that their parents were demanding and perfectionistic tended to have higher levels of dysfunctional attitudes irrespective of their levels of anxious attachment and discomfort with intimacy.

In the case of self-esteem and dysfunctional attitudes, the anxious dimension of attachment appeared to be more important than the discomfort with intimacy dimension. In particular, the anxious dimension mediated the associations between perceptions of adverse parenting and these aspects of cognitive style. To the extent that perceptions of perfectionistic and critical parenting resulted in greater worries about abandonment (anxious dimension), it contributed to lower self-esteem and more dysfunctional attitudes. On the other hand, the discomfort with intimacy dimension of attachment did not mediate the associations between perceptions of adverse parenting and self-esteem or dysfunctional attitudes. Although perceptions

of perfectionistic and critical parenting tended to be associated with discomfort with close relationships (discomfort with intimacy dimension), this discomfort does not appear to contribute to lower self-esteem or greater dysfunctional attitudes. Instead, it appears to contribute to another aspect of cognitive style, namely attributional style. To the extent that perceptions of perfectionistic and critical parenting result in discomfort becoming close to others (discomfort with intimacy dimension), they appear to contribute to a greater tendency to attribute negative life events to causes that are global, stable and internal in nature. We should note however that zero order correlations between perceptions of parenting and attributional style were only significant for girls and not boys, suggesting that these processes may be gender specific. We should also note that the low internal consistency of the measure of attributional style likely attenuated effects.

The Influence of Gender

Interestingly, we found gender differences in the associations between perceptions of parenting and cognitive style, as well as attachment security. In our adolescent sample, girls appeared to be more sensitive to the effects of perceptions of adverse parenting than boys. For example, among boys perceptions of critical parenting was not a statistically significant predictor of any of our dependent measures ($|r's| \leq .20$) except the discomfort with intimacy dimension of attachment ($r = -.34$), whereas among girls higher levels of perceptions of critical parenting were associated with lower self-esteem ($r = -.52$), greater dysfunctional attitudes ($r = .60$), and a more negative attributional style ($r = .38$), as well as an attachment style characterized by greater anxiety ($r = .60$) and discomfort ($r = -.50$) getting close to others.

It is possible that this greater sensitivity to adverse parenting accounts for the well established increased risk for depression among females as they reach adolescence (Nolen-Hoeksema & Girgus, 1994). Longitudinal research conducted by Nolen-Hoeksema, Girgus, and Seligman (1991) suggests that in elementary school children, boys evidence a more maladaptive explanatory style than girls when explaining the cause of life events. In their sample, boys were more likely than girls to attribute negative events to internal, stable, and global causes. In addition, boys in this sample also consistently reported more depressive symptoms than girls across the four testing periods, particularly for symptoms of anhedonia and behavioral disturbance. It is worth noting that this research was conducted with elementary school children in the third grade. In contrast, research suggests that by the early teenage years, girls report more depression than boys and evidence a more negative self-image (Kandel & Davies, 1986). To date no studies have examined whether the switch in sex differences in depression from childhood to adolescence can be accounted for by sex differences in cognitive style.

Caveats, Limitations, and Future Directions

The present study integrates and extends findings from previous research. For example, together with several other studies (Garber et al., 1997; Miller, Warner,

Wickramaratne, & Weissman, 1999; Mongrain, 1998; Randolph & Dykman, 1998; Whisman & Kwon, 1992), our results suggest that problematic parent-child relationships may give rise to cognitive vulnerabilities to depression, including negative beliefs about the self and feelings of worthlessness. Our study advances this line of research by finding evidence that the effects of perceptions about parenting on beliefs about self-worth, dysfunctional attitudes and negative attributional style are generally indirect and mediated by attachment insecurity. In other words, the present study suggests that dysfunctional early parent-child interactions may shape cognitive vulnerabilities to emotional distress through their impact on maladaptive attachment representations. The present study also found evidence that perceptions of parenting have a stronger influence on cognitive style and attachment security among girls compared to boys. Importantly, our path analyses included gender as a covariate, and so our results are not biased by the gender differences in sensitivity to parenting styles. Nonetheless, it is important to note that other factors early in life, such as maternal depression (Garber & Flynn, 2001), peer relationships (Field, Diego, & Sanders, 2001), parental modeling of negative cognition (Alloy et al., 2001) and maltreatment (Gibb et al., 2001), can contribute to negative cognitive styles. At present, it is not known whether or not these relationships are mediated by attachment.

Although the fit indices all indicate that the hypothesized models provide a very good fit to the data, there are several limitations to the study that should be addressed in future investigations. First, the standardized path coefficients in the model are modest, thus suggesting that other factors also play a role in determining adolescent cognitive styles. Second, the sample was comprised of predominantly Caucasian (95.5%) adolescents from a small rural community in the Northeast United States. Therefore, the generalizability of these results to an urban or more ethnically diverse sample is not known. Third, the generalizability of the model to a clinical sample of adolescents also remains untested and should be investigated in adolescents who are clinically depressed. We might expect that parental criticism would play a stronger role in samples of clinically depressed adolescents since other studies have found that families of depressed youth tend to be less cohesive, less supportive, more controlling, and more conflictual than families of non-depressed children and adolescents (Kaslow, Deering, & Racusin, 1994). Finally, the cross-sectional correlational design of our study cannot address the issue of causal direction. Longitudinal studies that include multiple informants (e.g., parents, siblings, peers) and multiple methodologies (e.g., self-report measures, peer/family interviews) are needed to better address causality. Relatedly, although the structural equation modeling approach we utilized suggests that the hypothesized model provides a very good fit to the data, it is possible that other models also fit these data.

In addition to addressing these limitations, future research should examine the separate effects of maternal and paternal parenting. Our study was unable to address the independent and possible interactive contributions of mothers and fathers because we asked participants to identify a single, primary caregiver when completing the parenting measures. It is possible that our gender interactions may be driven in part by a same-sex identification with one's primary caregiver. This is important because Salzman (1996) found that young women who

report secure attachment to their mothers during adolescence also report higher self-esteem and lower depression relative to insecurely attached women. Furthermore, in the Salzman (1996) study, the securely attached group showed significantly higher positive maternal identification than either of the insecurely attached groups.

Another important area for future research concerns the specificity of various dimensions of adverse parenting on particular dimensions of attachment insecurity, and the specificity of various dimensions of attachment insecurity on particular dimensions of cognitive vulnerability. For example, it may be that dismissing and preoccupied attachment styles arise from somewhat different family dynamics and parenting behaviors (Blatt & Homann, 1992). Likewise, different dimensions of attachment security may play out differently on various facets of self-esteem. That is, individuals with a dismissing attachment style, who feel uncomfortable with intimacy, may be most likely to experience extreme self-criticism as their self-esteem is deflated. On the other hand, those with a more preoccupied attachment style, intensely fearing abandonment, may experience loss of self-esteem in terms of feelings of unlovableness. These two types of individuals may anchor their self-esteem on very different contingencies, e.g., achievement versus sociotropic striving, and be sensitive to different types of stressful life events (see Crocker & Wolfe, 2001). Future research measuring more specific facets of self-esteem would be needed to examine this issue (see Roberts & Monroe, 1994, 1999 for discussion of multifaceted views of self-esteem).

In summary, the present study contributes to our growing understanding of the connections between parent-child relationships, attachment insecurity, and cognitive vulnerability to emotional distress. Our data are consistent with the idea that adverse parenting puts adolescents at risk for the development of negative cognitive styles largely through its effects on attachment style. Further, the effects of perceptions of adverse parenting on attachment and cognitive style appear to be greater among adolescent females than males. Future research should explore how specific aspects of mothers' and fathers' parenting may contribute to particular aspects of attachment insecurity, and how specific aspects of attachment insecurity may contribute to different facets of cognitive style.

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