

*PARENTING CHARACTERISTICS ASSOCIATED
WITH ANXIETY AND DEPRESSION:
A MULTIVARIATE APPROACH*

KARLA ANHALT
KENT STATE UNIVERSITY

Tracy L. Morris
WEST VIRGINIA UNIVERSITY

This study examined the association between perceived parenting factors and symptoms of social anxiety, generalized anxiety and depression. Participants rated experiences with their mothers and fathers with regard to parental care, overprotection, criticism, parent-adolescent attachment, and family sociability. Regression analyses examined the contribution of perceived parenting to participant anxiety and depression scores. Maternal and paternal parenting practices accounted for 9 to 20% of the variance in internalizing concerns. In particular, maternal sociability, paternal care, and maternal and paternal criticism made unique contributions to the prediction of social anxiety, generalized anxiety, and depression scores. Parenting styles characterized by low levels of care and high levels of protection were associated with elevated internalizing symptoms. Suggestions for future research and implications for early intervention are discussed.

Key words: Anxiety, Depression, Etiology, Parenting, Family Factors

Recent reports on the prevalence and course of internalizing disorders in youth underscore the need for further research to understand their etiology and treatment. Although transient experiences of fear, worry, and anxiety characterize typical development, a number of children and adolescents experience severe symptoms that lead to impairment in daily functioning (Albano, Chorpita, & Barlow, 2003). Approximately 20% of children and adolescents are affected by pediatric anxiety disorders at some point in their development and symptoms may persist into adulthood (Vasa & Pine, 2004). The prevalence of unipolar depression among children and adolescents has been reported to be 5% and 10 to 15% of youth experience symptoms of depression before adulthood (U.S. Department of Health and Human Services [DHHS], 1999). Children and adolescents diagnosed with major depressive disorder have a 72% cumulative risk of a new episode within five years (Kovacs et al.,

1984). Given these facts, it is important to understand the etiology of depression and anxiety in children and adolescents so that effective interventions can be implemented.

Research regarding the etiology of depression and anxiety is scarce. This is particularly the case for psychosocial factors that may be associated with later diagnoses of mood and anxiety disorders. Although there has been an increase in treatment outcome research for youth with internalizing problems, a better understanding of the etiology of these concerns could facilitate the development of comprehensive interventions. The scientific community has widely accepted the notion that both biological predispositions and environmental variables are likely related to the emergence of anxiety and depression (DHHS, 1999). Environmental factors that have been identified as potential contributors to depression and anxiety include acute and chronic stressors, modeling, specific conditioning episodes, and childrearing

patterns (Morris & March, 2004; Rapee, 1997; Wood, McLeod, Sigman, Hwang, & Chu, 2003). Childrearing factors that have been examined in previous studies include parenting style, perceived attachment, encouragement of family sociability, and parental concern with others' opinions.

Parental care, responsiveness, and warmth constitute one dimension of parenting style that has been evaluated. Another dimension of parenting style focuses on parental control and protection (Wood et al., 2003). With regard to social anxiety, retrospective studies have found that persons with social phobia recall their parents as lacking in emotional warmth and being rejecting and overprotective (Arrindell, Emmelkamp, Monsma, & Brilman, 1983; Arrindell, et al., 1989). Associations between parenting style and trait anxiety and depression also have been documented. Specifically, people who reported high levels of trait anxiety and depression perceived that their mothers provided them with low levels of care and were overprotective (Parker, 1979; Parker, 1981; Parker, 1990). With regard to paternal variables, Parker (1979) found that paternal characteristics were not significant predictors of depression and anxiety. However, a subsequent study found that persons with "anxiety neurosis" remembered their fathers as less caring and more overprotective than participants in a control group (Parker, 1981). Parker (1981) described people with anxiety neurosis as having global symptoms, such as fear, poor concentration, and irritability.

The association between offspring adjustment and parent-child relationship quality also has been investigated. Parent-child relationship quality is sometimes referred to as attachment. Dimensions of attachment evaluated in previous studies include trust in the relationship, alienation from the parent figure, parent as a source of support, and parent as facilitator of independence (Armsden & Greenberg, 1987; Kenny, 1987). Armsden and Greenberg (1987)

administered a parent-adolescent attachment questionnaire to a sample of college students, along with measures of psychological well-being, affective status, family characteristics, and stressful life events. The authors divided the sample into participants with high security ratings (HSR) and low security ratings (LSR). Armsden and Greenberg (1987) found that HSR were positively correlated with high self-esteem and satisfaction with life. High security ratings were negatively correlated with reported depression, anxiety, irritability, and anger scores. Berman, Heiss, and Sperling (1994) also reported negative correlations between parent-adolescent attachment and female participants' reports of loneliness, as well as male participants' reports of depression.

Two additional factors of interest to this study include family sociability and parental concern with the opinions of others. Studies focusing on this aspect of parenting are of particular interest to the etiology of social phobia (Masia & Morris, 1998). Bruch, Heimberg, and colleagues examined the role of parental concern with others' opinions and the development of social phobia (Bruch, Heimberg, Berger, & Collins, 1989; Bruch & Heimberg, 1994). The authors found that individuals with social phobia were more likely than control group participants to report that their parents were overly concerned with the opinions of others and used shame in social contexts as a means of disciplining them. The contribution of family sociability to later presence of social phobia also was examined by these authors. Individuals with social phobia perceived their mothers as more avoidant of social situations and their families as less encouraging of sociability than people with agoraphobia (Bruch et al., 1989). Generalized social phobia was associated with family isolation (e.g., less contact with neighbors, relatives, and acquaintances) and discouragement of sociability (e.g., parents dissuading children from attending a social

event; Bruch & Heimberg, 1994). Another study found that mothers of participants with social phobia established greater control over their children's socialization than mothers of participants with panic disorder or a control group (Rapee & Melville, 1997). In addition, mothers and participants in the social phobia and panic disorder groups reported less involvement in social activities than participants in the control group (Rapee & Melville, 1997).

To summarize, studies examining the association between parenting factors and anxiety and depression typically have included only one or two parenting variables (e.g., parenting style, family sociability) and the vast majority have evaluated parenting based solely on perceived maternal behaviors to the exclusion of fathers. When experiences with both mothers and fathers have been evaluated, results regarding paternal influences have been mixed. This study expands the research literature in several ways. First, the study takes a multivariate approach to the relation among the perception of parenting experienced in childhood and early adolescence with later anxiety and depression. The unique, relative, and total contribution of several parenting factors to social anxiety, generalized anxiety, and depression was evaluated. These parenting factors included: perceived parental care and protection, parental criticism regarding social situations, parental encouragement of family sociability, and parent-adolescent attachment. Second, participant reports of maternal and paternal childrearing variables were examined in an effort to obtain a more comprehensive picture of parenting factors associated with anxiety and depression. Another purpose of the study was to evaluate the differences in perceived parenting styles reported by individuals with and without clinical levels of internalizing problems. In this person-centered versus variable-centered approach, psychometrically sound measures of depression, social anxiety, and generalized

anxiety are emphasized. These constructs are more consistent with current nomenclature than labels for dependent variables that have been used in past studies (e.g., anxiety neuroses).

METHOD

Participants

Participants were 434 undergraduate students at West Virginia University (WVU). Participants ranged in age from 18 to 22 years ($M = 19.10$, $SD = 1.05$). Sixty-five percent of participants were women. The ethnic composition was 92% Caucasian, 4% African-American, 2% Asian-American, 1% Hispanic, and 2% "other." Ninety-seven percent identified as heterosexual.

The following recruitment strategies were used: (a) sign-up sheets for this study were posted on the Department of Psychology's participant recruitment board, (b) announcements were made about the study by the principal investigator and instructors during various undergraduate psychology courses, and (c) announcements were posted on the WVU Psychology webpage.

Measures

Parental Bonding Instrument (PBI; Parker, Tupling, and Brown 1979). The PBI is a 25-item self-report measure of perceived parenting style that is completed separately for each parent. Respondents are asked to rate each item on a four-point Likert-type scale, ranging from 1 = "very like", to 4 = "very unlike." The PBI has a *care* subscale and an *overprotection* subscale. The care subscale is evaluated within the continuum of warmth and rejection (e.g., "My mother seemed emotionally cold to me"). The overprotection subscale includes items about parental intrusiveness and infantilization (e.g., "My father invaded my privacy"; "My father tended to baby me"). The PBI has been proven robust across numerous studies and

international samples (see Parker 1990). Moderate test-retest reliability coefficients have been reported for the care subscale ($r = .76$), and for the overprotection subscale ($r = .63$). Adequate split-half reliabilities have been found for the care subscale ($r = .88$) and the overprotection subscale ($r = .74$).

Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987). The IPPA consists of three 25-item measures of attachment to mother, father, and peers, respectively. The IPPA is a widely used measure of parent-adolescent attachment among college students (Heiss, Berman, & Sperling, 1996), and it has been used to assess parental and peer attachment in early adolescence (e.g., Armsden, McCauley, Greenberg, Burke, & Mitchell, 1990). In this study, good internal consistency was found for reports about fathers ($\alpha = .78$) and mothers ($\alpha = .73$). An exploratory factor analysis for the 25 IPPA items that pertain to attachment to fathers was performed in order to evaluate the factor structure that was the best fit for our sample. Factor analyses also were performed in an attempt to reduce the number of variables used in the study. A one-factor solution was most appropriate for our sample and the total IPPA score was used as the measure of attachment to both mothers and fathers.

Parent Attitudes Toward Child-Rearing scale (PACR; Bruch et al., 1989). The PACR is a 19-item self-report measure of perceived parenting behaviors, with a particular focus on familial experiences in social situations. On the PACR, items are rated on a scale of 1 (not characteristic of parent) to 5 (very characteristic of parent). Reports on normative data, reliability, and validity of the PACR are limited, as it has been used in few published studies. In order to utilize empirically derived subscales and to understand the factor structure of the PACR as it applied to our sample, an exploratory factor analysis (EFA) was performed. Two factors emerged from this EFA. The first factor was named “family

sociability” as it contained items about parental interest in social activities for the family (e.g., “Our family liked having parties”). The second factor was named “parental criticism in social situations” (sample item: “If I acted afraid to talk to somebody...my parents would criticize me for acting unfriendly”). Adequate internal consistency was found for the PACR maternal sociability subscale ($\alpha = .80$), as well as for the paternal sociability subscale ($\alpha = .79$). Also, good internal consistency was demonstrated for the PACR paternal criticism ($\alpha = .79$) and maternal criticism ($\alpha = .79$) subscales.

Social Phobia and Anxiety Inventory (SPAI; Turner, Beidel, Dancu, & Stanley, 1989). The SPAI is a 45-item self-report questionnaire designed to assess somatic complaints, cognitions, and avoidance behaviors that have been found to be anxiety provoking in people with social phobia. Respondents are asked to report how frequently they experience each behavior, based on a 7-point Likert-type scale ranging from 1 = “never” to 7 = “always.” The SPAI has demonstrated adequate test-retest reliability and discriminative validity (Turner, et al., 1989; Turner, Beidel, & Dancu, 1996).

Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, and Steer (1988). The BAI is a 21-item self-report measure of physiological, overt behavioral, and cognitive symptoms of anxiety. The BAI was developed in an attempt to measure anxiety symptoms that typically are not shared with those of depression. Respondents are asked to report on their anxiety symptoms for the previous week on a 4-point Likert-type scale. Sample items include “fear of the worst happening,” and “difficulty breathing.” The authors have reported high internal consistency for the measure as well as adequate test-retest reliability (Beck, et al., 1988).

Beck Depression Inventory-II (BDI-II; Beck, Steer, and Brown, 1996). The BDI-II

was developed to assess symptoms of depression based on the criteria set forth by the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (American Psychiatric Association, 1994). The BDI-II is a 21-item measure that yields the self-reported severity of depressive symptoms; it is appropriate for use with adolescents and adults, ages 13 and older (Beck, et al., 1996). Respondents are asked to rate how items pertain to the way they have been feeling during the past two weeks on a 4-point Likert-type scale. Good internal consistency has been reported for the BDI-II. One study reported a coefficient alpha of .93 (Beck, et al., 1996). Also, a one-week test-retest correlation of .93 was found for a subsample of 26 outpatient therapy clients from the initial sample of 500.

Procedure

Participants were asked to complete the perceived parenting measures as they pertained to their mother (or the maternal figure that has most influenced them, such as a stepmother) and their father (or the paternal figure that has most influenced them, such as a stepfather). Participants were asked to rate items on the Parent Attitudes Toward Child-Rearing (PACR) and Parental Bonding Instrument (PBI) based on how they remembered their parents' behaviors through the age of 16. Respondents were asked to complete the Inventory of Parent and Peer Attachment based on their current relationship with attachment figures. Participants were asked to report present levels of generalized anxiety, social anxiety, and depression when completing the clinical measures (i.e., SPAI, BAI, BDI-II). The least intrusive measures were placed at the beginning of the questionnaire packet (e.g., general demographic information). More intrusive measures were placed at the end (e.g., BDI-II). Participants were informed that their responses would be anonymous. Respondents

received extra credit for psychology courses in return for their participation.

RESULTS

Correlations among dependent variables were considered. The measure of social anxiety for this study was the SPAI difference score ($M = 50.56$, $SD = 28.56$). Generalized anxiety for participants was determined based on the total BAI score ($M = 11.13$, $SD = 9.47$). Depression symptoms were determined based on participant's total BDI-II score ($M = 11.11$, $SD = 8.76$). The association between the SPAI and BAI was low ($r = .30$), as was the association between the SPAI and BDI-II ($r = .29$). However, there was a moderate association between the BAI and BDI-II ($r = .59$). The three clinical measures were retained as separate dependent variables, as each is considered to represent a distinct construct.

Separate hierarchical multiple regressions investigated the relative and total contribution of various maternal and paternal factors to social anxiety, generalized anxiety, and depression. Two regression analyses were performed per measure of clinical concern. For each dependent variable, one regression equation contained maternal factors as independent variables and a second regression contained paternal factors as predictors. In each equation, gender was entered at Step 1 and the parenting variables were entered as a block in Step 2. The following predictors were entered as independent variables for the regression analyses: care score from the PBI, overprotection score from the PBI, total score from the IPPA, sociability score from the PACR, and criticism score from the PACR. These variables are referred to as care, protection, parent-adolescent attachment, sociability, and criticism, respectively. Pearson correlation coefficients between maternal parenting factors are reported in Table 1. Correlations between paternal parenting factors are listed in Table 2.

Table 1
Correlations Between Maternal Parenting Variables

	2	3	4	5
1. PBI Mother Care	-.38**	.32**	-.36**	.64**
2. PBI Mother Protection		-.23**	.53**	-.30**
3. PACR Maternal Sociability			-.14**	.27**
4. PACR Maternal Criticism				-.36**
5. IPPA Total for Mother				---

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

Note. PBI = Parental Bonding Instrument, PACR = Parent Attitudes Toward Child Rearing, IPPA = Inventory of Parent and Peer Attachment

Table 2
Correlations Between Paternal Parenting Variables

	2	3	4	5
1. PBI Paternal Care	-.34**	.47**	-.35**	.79**
2. PBI Paternal Protection		-.26**	.44**	-.29**
3. PACR Paternal Sociability			-.18**	.42**
4. PACR Paternal Criticism				-.34**
5. IPPA Total for Father				---

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

Note. PBI = Parental Bonding Instrument, PACR = Parent Attitudes Toward Child Rearing, IPPA = Inventory of Parent and Peer Attachment

Findings from Regression Analyses

Contribution of parenting variables to social anxiety. After controlling for gender, maternal factors accounted for an additional 11% of the variance in social anxiety (SPAI) scores, $F_{change}(5, 401) = 10.00, p < .001$. All predictors were associated with social anxiety scores, as is evident by an examination of the correlation coefficients in Table 3. However, an examination of the beta weights from the full equation revealed that maternal sociability and maternal criticism were the only variables that made a statistically significant contribution

to the prediction of social anxiety scores. Paternal factors accounted for 9% of the variance in social anxiety (SPAI) scores, $F_{change}(5, 393) = 7.69, p < .001$. All predictors had statistically significant associations with social anxiety scores (see Table 3). When the five parenting variables were considered together, the beta weights for paternal care, protection, and sociability were statistically significant.

Contribution of parenting variables to depression symptoms. Beck Depression Inventory (BDI-II) scores were regressed on

gender (step 1) and maternal parenting factors (step 2). Gender accounted for 1% of the variance in BDI-II scores, $F_{change}(1, 406) = 4.38, p < .05$. At step 2, maternal parenting variables accounted for an additional 16% of the variance in BDI-II scores, $F_{change}(5, 401) = 15.08, p < .001$. All maternal parenting variables had statistically significant correlations with depression (BDI-II) scores. When considered together, only maternal sociability and criticism were statistically significant predictors of depression scores. When BDI-II scores were regressed on paternal parenting variables, they accounted for 20% of the variance in BDI-II scores, $F_{change}(5, 393) = 19.41, p < .001$. The five paternal factors correlated significantly with depression scores. When paternal factors were evaluated as a group, the beta weights for paternal care and criticism contributed significantly to the prediction of depression scores (see Table 4).

Contribution of parenting variables to generalized anxiety symptoms. Beck Anxiety Inventory (BAI) scores were regressed on gender (step 1) and maternal parenting factors (step 2). At Step 1, gender accounted for 1% of the variance in Beck Anxiety Inventory (BAI) scores, $F_{change}(1, 406) = 4.47, p < .05$. At Step 2, maternal parenting variables accounted for an additional 9% of the variance in BAI scores, $F_{change}(5, 401) = 7.60, p < .001$. All maternal parenting variables except for

mother-adolescent attachment correlated significantly with generalized anxiety (BAI) scores. However, when the predictive quality of maternal factors was evaluated, maternal sociability and criticism contributed significantly to the prediction of generalized anxiety scores (see Table 5). Paternal parenting factors accounted for 9% of the variance in generalized anxiety (BAI) scores, $F_{change}(5, 393) = 7.96, p < .001$. All paternal factors correlated significantly with generalized anxiety scores. When paternal factors were evaluated as a group, paternal care and criticism were the only predictors that contributed in a statistically significant manner to the prediction of generalized anxiety scores (see Table 5).

Possible interaction effects for gender and parenting factors on the SPAI, BDI-II, and BAI were examined. The regression analyses reported previously were repeated, adding the appropriate interaction term at Step 3 (e.g., gender by PBI maternal protection). To maintain an adequate variable to subjects ratio, each interaction term was tested separately after first centering all predictor variables around zero as a means of reducing multicollinearity between main effects and interaction terms. In no case was the interaction term for gender or parenting factor statistically significant. Thus, the results from the regression analyses reported in Tables 3 through 5 were not moderated by gender.

Table 3
Hierarchical Regression Analyses for Parenting Variables Predicting SPAI Scores

Predictor	R ² _{Change}	F _{change}	Beta	r
<u>Equation Including Maternal Variables as Predictors</u>				
Step 1				
Gender	.00	.59	-.04	-.04
Step 2				
PBI Maternal Care			.03	-.17**
PBI Maternal Protection			.04	.19**
PACR Maternal Sociability			-.22**	-.27**
PACR Maternal Criticism			.14*	.21**
IPPA Total for Mother			-.11	-.21**
Statistics for Step	.11	10.00**		
<u>Equation Including Paternal Variables as Predictors</u>				
Step 1				
Gender			.01	2.01
Step 2				
PBI Paternal Care			.18*	-.11*
PBI Paternal Protection			.12*	.18**
PACR Paternal Sociability			-.20**	-.23**
PACR Paternal Criticism			.09	.18**
IPPA Total for Father			-.15	-.17*
Statistics for Step	.09	7.69**		

* $p < .05$ ** $p < .001$

Note. SPAI = Social Phobia and Anxiety Inventory, PBI = Parental Bonding Instrument, PACR = Parent Attitudes Toward Child Rearing, IPPA = Inventory of Parent and Peer Attachment

Table 4
 Hierarchical Regression Analyses for Parenting Variables Predicting BDI-II Scores

Predictor	R ² _{Change}	F _{change}	Beta	r
<u>Including Maternal Variables as Predictors</u>				
Step 1				
Gender	.01	4.47*	.10*	.10*
Step 2				
PBI Maternal Care			-.10	-.25**
PBI Maternal Protection			.09	.27**
PACR Maternal Sociability			-.17*	-.24**
PACR Maternal Criticism			.23**	.29**
IPPA Total for Mother			.03	-.16**
Statistics for Step	.16	15.08**		
<u>Equation Including Paternal Variables as Predictors</u>				
Step 1				
Gender	.01	3.73		
Step 2				
PBI Paternal Care			-.28**	-.33**
PBI Paternal Protection			.07	.29**
PACR Paternal Sociability			-.09	-.22**
PACR Paternal Criticism			.26**	.34**
IPPA Total for Father			.13	-.23**
Statistics for Step	.20	19.41**		

* $p < .05$ ** $p < .001$

Note. BDI-II = Beck Depression Inventory - II, PBI = Parental Bonding Instrument, PACR = Parent Attitudes Toward Child Rearing, IPPA = Inventory of Parent and Peer Attachment

Table 5
Hierarchical Regression Analyses for Parenting Variables Predicting BAI Scores

Predictor	R ² _{Change}	F _{change}	Beta	r
<u>Equation Including Maternal Variables as Predictors</u>				
Step 1				
Gender	.01	4.47*	.10*	.10*
Step 2				
PBI Maternal Care			-.02	-.12*
PBI Maternal Protection			.09	.21**
PACR Maternal Sociability			-.10*	-.14*
PACR Maternal Criticism			.22**	.23**
IPPA Total for Mother			.05	-.07
Statistics for Step	.09	7.60**		
<u>Equation Including Paternal Variables as Predictors</u>				
Step 1				
Gender	.01	3.79		
Step 2				
PBI Paternal Care			-.24*	-.20**
PBI Paternal Protection			.04	.20**
PACR Paternal Sociability			-.01	-.10*
PACR Paternal Criticism			.20**	.23**
IPPA Total for Father			.15	-.11*
Statistics for Step	.09	7.96**		

*p < .05 **p < .001

Note. BAI = Beck Anxiety Inventory, PBI = Parental Bonding Instrument, PACR = Parent Attitudes Toward Child Rearing, IPPA = Inventory of Parent and Peer Attachment

Parenting Style and Measures of Clinical Concern

Analyses were performed to evaluate potential differences in perceived parenting styles for participants with and without clinically significant levels of social anxiety, generalized anxiety, and depression. Separate analyses were performed to evaluate perceived maternal and paternal parenting styles

reported by our sample. Based on the subscale categories obtained on the PBI, Parker and colleagues (1979) described how four parental styles can emerge: (a) Optimal Parenting (high care, low overprotection); (b) Neglectful Parenting (low care, low overprotection); (c) Affectionate Constraint (high care, high overprotection); and (d) Affectionless Control (low care, high overprotection).

Levels of social anxiety and perceived parenting style. Participants were divided into two groups with respect to SPAI scores: One group included participants with SPAI scores of 80 and above. This was considered to be the group with probable social phobia, as recommended in the basic screening guidelines of the measure (Turner, et al., 1996). The second group had SPAI scores below 80. Pearson chi-square tests were run to identify any patterns between social anxiety and parenting style as measured by the PBI. The first 2 x 4 contingency table represented the variables Social Anxiety (socially anxious; control group) x PBI Maternal Style (optimal parenting; affectionate constraint; affectionless control; neglectful parenting). Significant differences were found for social anxiety scores by maternal parenting style, $X^2(3, N = 434) = 8.17, p < .05$. Of interest, 36% of socially anxious participants, compared to 20% of participants in the control group, remembered their mother as having an affectionless control style (low warmth, high overprotection).

The second 2 x 4 contingency table represented the variables Social Anxiety (socially anxious and control group) x PBI Paternal Style (optimal parenting; affectionate constraint; affectionless control; neglectful parenting). Significant differences also were found for social anxiety scores by paternal parenting style, $X^2(3, N = 433) = 10.52, p < .05$. Thirty-three percent of socially anxious participants, compared to 22% of control group participants remembered their fathers as demonstrating an affectionless control parenting style. Also, 31% of socially anxious participants versus 20% of control group participants remembered their fathers as exhibiting an affectionate constraint parenting style.

Participant levels of depression and perceived parenting style. Participant BDI-II scores were divided into two groups. The “depressed” group were those who had BDI-

II scores of 14 or higher, as Beck et al. (1996) suggested that scores of 14 may reflect mild depression. The “control” group had BDI-II scores of 13 or less. Pearson chi-square tests were performed to identify any patterns between depression and parenting style as measured by the PBI. The first 2 x 4 contingency table represented the variables Depression (depressed and control group) x PBI Maternal Style (optimal parenting; affectionate constraint; affectionless control; neglectful parenting). Significant differences were found for participant depression scores by maternal parenting style, $X^2(3, N = 434) = 27.60, p < .001$. Thirty-six percent of depressed participants versus 16% of control group participants remembered their mothers as engaging in an affectionless control style.

The second 2 x 4 contingency table represented the variables Depression (depressed and control group) x PBI Paternal Style (optimal parenting; affectionate constraint; affectionless control; neglectful parenting). Significant differences also were found for participant depression scores by paternal parenting style, $X^2(3, N = 433) = 35.27, p < .001$. Forty percent of participants in the depressed group remembered their fathers as having an affectionless control parenting style. In contrast, 16% of participants in the control group remembered their fathers in this manner.

Participant levels of anxiety and perceived parenting style. Two groups were formed based on participant BAI scores. The “anxious” group was composed of those whose BAI scores were 10 or greater, consistent with Beck and Steer’s recommendation that scores in this range suggest clinically significant anxiety (Beck & Steer, 1990). Participants in the “control” group had BAI scores of 9 or less. Pearson chi-square tests were run to identify any patterns between general anxiety and parenting style as measured by the PBI. No significant differences were found for participant general

anxiety scores by maternal parenting style. The second 2 x 4 contingency table represented the variables Anxiety (anxious and control group) x PBI Paternal Style (optimal parenting; affectionate constraint; affectionless control; neglectful parenting). Significant differences were found for participant general anxiety scores by paternal parenting style, $X^2(3, N = 433) = 29.41, p < .001$. Thirty one percent of anxious participants remembered their fathers as engaging in an affectionless control parenting style. In contrast, 16% of participants in the control group remembered their fathers in this manner.

DISCUSSION

Parental Factors with Predictive Value for Social Anxiety

As reviewed in the introduction, family isolation from social activities and parental discouragement of offspring sociability have been reported at higher rates by people with social phobia and avoidant personality disorder than by those without psychopathology or with other mental disorders (e.g., Arbel & Stravyinski, 1991; Bruch et al., 1989; Bruch & Heimberg, 1994). In this study, maternal and paternal sociability were predictors of social anxiety. Specifically, participant reports of limited family sociability were associated with high levels of social anxiety. Also, maternal criticism, paternal care and paternal protection were predictors of social anxiety. Specifically, overprotection, higher levels of criticism, and low levels of care were associated with increased social anxiety. It is important to consider that paternal variables were as predictive of social anxiety as maternal variables.

Predictive Quality of Parenting Factors for Depression and Generalized Anxiety

Similar predictors were important when BAI and BDI-II scores were regressed on

maternal and paternal factors, although the magnitude of the association was greatest for maternal and paternal factors and depression. Four predictors stood out as significant for participant levels of generalized anxiety and depression: maternal and paternal criticism, maternal sociability, and paternal care. Low levels of care and sociability, and high levels of criticism were related to elevations in depression and generalized anxiety scores. Of interest, maternal encouragement of family sociability had not been identified in previous studies as a predictor of depression and generalized anxiety. Future research is needed to address the process by which experience in social situations could affect the development of general anxiety and depression.

Interestingly, in this study parental criticism played a greater role than parental overprotection in relation to anxiety and depression scores. In a review of the literature, Rapee (1997) noted that when perceived parental control and rejection have been studied, parental rejection plays a primary role in predicting depression scores. If the construct of control is considered most closely associated with overprotection, and the construct of rejection is similar to parental criticism, findings from our regression analyses are consistent with the notion that criticism may be a better predictor than overprotection with regard to the development of depression. The trends observed in the regression analyses suggest that familial pathways to depression and general anxiety (as measured by the BDI-II and the BAI) may share more commonalities than familial pathways to social anxiety (as measured by the SPAI), although this merits further investigation.

Parenting Style Category and Measures of Clinical Concern

Relevance to social anxiety. In the present study, participants who perceived their mothers as having a PBI parenting style of

affectionless control, and participants who perceived their fathers as having a PBI parenting style of affectionless control or affectionate constraint (both reflecting high levels of overprotection) were more likely to report high levels of social anxiety as measured by the SPAI. These findings are consistent with the previous empirical literature, which has noted that people who perceived their mothers as lacking in emotional warmth and being more rejecting (components of the affectionless control parenting style) are more likely to be socially anxious (e.g., Arrindell et al., 1983; Arrindell et al., 1989). The association between the perceived paternal style of affectionate constraint (high care and high overprotection) and social anxiety is unique to the present investigation, and suggests that the maternal and paternal behaviors associated with the development of social anxiety may be qualitatively different.

Relevance to depression and general anxiety. In the present investigation, participants who perceived their parents in a manner consistent with the PBI affectionless control parenting style were more likely to endorse high levels of depressive symptoms. Perceived paternal affectionless control parenting style also emerged as related to high levels of general anxiety in participants. Interestingly, no patterns were evident between maternal parenting style and general anxiety symptoms.

Limitations of Current Study

One limitation of this study pertains to its retrospective nature. Participant responses may have been biased because most of the parenting experiences reported had occurred one to six years prior to completing the questionnaires. In addition, the parenting factors considered were evaluated based on participants' perceptions of their parents' behaviors.

The review of the literature and the results of this study have placed an emphasis on

parental socialization as related to the development of internalizing symptoms. However, other familial variables, such as genetics, may indeed account for or compound the effects of childrearing factors. Further, children bring to the parent-child dyad their own temperamental characteristics, which will likely influence the nature of parents' interaction with them. Thus, parenting behaviors may be highly influenced by child characteristics, and a more comprehensive understanding of parent-child interactions would incorporate a bidirectional model. Finally, the outcome measures evaluated symptoms of anxiety and depression. The presence of actual anxiety or mood disorders was not examined, so conclusions cannot be generalized to clinical populations.

Suggestions for Future Research

An ideal investigation of the relation between parenting factors and internalizing problems would take place as a prospective study of the developmental pathways to social anxiety, generalized anxiety, and depression. Theoretical perspectives on the pathway to social anxiety, generalized anxiety, and depression include family process as one of several factors that are likely influential in the development of these disorders. Other factors related to the development of social anxiety are temperament, peer relationships, traumatic conditioning, cognitive biases and social skills deficits (Morris, 2001). Factors to examine with regard to generalized anxiety and depression include stressful life events, conditioning episodes, family interactions, among others. The ideal investigation would track a sample of infants' experiences and characteristics through late adolescence or young adulthood. However, practical constraints are so prohibitive as to make the conduct of such a comprehensive study implausible for most research groups.

Other, more feasible, studies in the area of parenting factors and social anxiety,

generalized anxiety, and depression could take place concurrently or prospectively using the methods of direct observation, self-report, or parent report of child-rearing variables. Masia and Morris (1998) provided detailed examples of how observational studies of parent-child interactions may be conducted for children who are at risk of developing social phobia, or who have been diagnosed with social phobia. Similar methods could shed light on the etiology of generalized anxiety and depression.

Implications for Early Intervention

The results of this investigation suggest that it would be beneficial for fathers and mothers to be involved in intervention for children with internalizing concerns. Advances in treatment also may take place if parent-child relational issues are addressed in therapy. Based on findings from this investigation, potential areas to address include parental criticism, family sociability, and parental display of affection. Forms of primary and secondary prevention of anxiety and mood disorders in children would be ideal (Barrett & Turner, 2004). Prevention programs targeting internalizing concerns have been found to reduce symptoms and in some cases prevent later diagnoses of anxiety (Barrett & Turner, 2004).

A number of psychosocial interventions have been systematically evaluated in the last few decades. These have primarily targeted children and adolescents with diagnosed (or diagnosable) generalized anxiety disorder, social phobia, or unipolar depression. Such forms of tertiary prevention are quite promising for teaching youth and their caretakers strategies to address physiological, emotional, and cognitive symptoms. Some examples of therapy approaches that may be particularly relevant to our discussion include "Social effectiveness therapy for children" (Beidel, Turner, & Morris, 2000; Beidel & Roberson-Nay, 2005) to address social anxiety

disorder and the "Coping Cat" program (Kendall, Aschenbrand, & Hudson, 2003) for general anxiety concerns. Suggestions for involving parents in the treatment of anxious treatment have been reviewed elsewhere (e.g., Barrett & Shortt, 2003; Ginsburg, Siqueland, Masia-Warner, & Hedtke, 2004). With regard to early intervention for childhood depression, Stark and colleagues reported clinically important outcomes using an approach that incorporates problem-solving training, coping skills, cognitive restructuring, and parent education (e.g., Stark et al., 2005). The "Adolescent Coping with Depression Course" has been effective as a secondary and tertiary prevention tool (Clarke et al., 1995; Rohde, Lewinsohn, Clarke, Hops & Seeley, 2005).

REFERENCES

- Albano, A. M., Chorpita, B. F., & Barlow, D. H. (2003). Childhood Anxiety Disorders. In E. J. Mash & R. A. Barkley (Eds.) *Child Psychopathology* (2nd ed., pp. 279-329). New York: Guilford.
- American Psychiatric Association (1987). *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed. rev.). Washington, DC: Author.
- American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.). Washington, DC: Author.
- Arbel, N., & Stravynski, A. (1991). A retrospective study of separation in the development of adult avoidant personality disorders. *Acta Psychiatrica Scandinavica*, *83*, 174-178.
- Armsden, G. C., & Greenberg, M. T. (1987). The Inventory of Parent and Peer Attachment: Individual differences and their relationship to psychological well-being. *Journal of Youth and Adolescence*, *16*, 427-454.
- Armsden, G. C., McCauley, E., Greenberg, M. T., Burke, P. M., & Mitchell, J. R. (1990). Parent and peer attachment in early adolescent depression. *Journal of Abnormal Child Psychology*, *18*, 683-697.
- Arrindell, W. A., Emmelkamp, P. M. G., Monsma, A., & Brillman, E. (1983). The role of perceived parental rearing practices in the aetiology of phobic disorders: A controlled study. *British Journal of Psychiatry*, *143*, 183-187.

- Arrindell, W. A., Kwee, M. G. T., Methorst, G. J., Van Der Ende, J., Pol, E., & Moritz, B. J. M. (1989). Perceived parental rearing styles of agoraphobic and socially phobic in-patients. *British Journal of Psychiatry, 155*, 526-535.
- Barrett, P. M., & Shortt, A. L. (2003). Parental involvement in the treatment of anxious children. In A. E. Kazdin & J. R. Weisz (Eds.) *Evidence-based psychotherapies for children and adolescents* (pp. 101-119). New York: Guilford Press.
- Barrett, P. M., & Turner, C. M. (2004). Prevention strategies. In T. L. Morris & J. S. March (Eds.), *Anxiety disorders in children and adolescents* (2nd ed.). New York: Guilford Press.
- Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: Psychometric properties. *Journal of Consulting and Clinical Psychology, 56*, 893-897.
- Beck, A. T., & Steer, R. A. (1990). *Beck Anxiety Inventory: Manual*. San Antonio, TX: The Psychological Corporation.
- Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Beck Depression Inventory - Second edition (BDI-II) manual*. San Antonio, TX: Psychological Corporation.
- Beidel, D. C., & Roberson-Nay, R. (2005). Treating childhood social phobia: Social effectiveness therapy for children. In E. D. Hibbs & P. S. Jensen (Eds.), *Psychosocial treatments for child and adolescent disorders: Empirically-based strategies for clinical practice* (2nd ed., pp. 75-96). Washington, DC: American Psychological Association.
- Beidel, D. C., & Turner, S. M. (1992). Scoring the Social Phobia and Anxiety Inventory: Comments on Herbert et al. (1991). *Journal of Psychopathology and Behavioral Assessment, 14*, 377-379.
- Beidel, D. C., Turner, S. M., & Morris, T. L. (2000). Behavioral treatment of childhood social phobia. *Journal of Consulting and Clinical Psychology, 68*, 1072-1080.
- Berman, W. H., Heiss, G. E., & Sperling, M. B. (1994). Measuring continued attachment to parents: The Continued Attachment Scale – Parent Version. *Psychological Reports, 75*, 171-182.
- Bruch, M. A., Heimberg, R. G., Berger, P., & Collins, T. M. (1989). Social phobia and perceptions of early parental and personal characteristics. *Anxiety Research, 2*, 57-65.
- Bruch, M. A., & Heimberg, R. G. (1994). Differences in perceptions of parental and personal characteristics between generalized and nongeneralized social phobics. *Journal of Anxiety Disorders, 8*, 155-168.
- Clarke, G. N., Hawkins, W., Murphy, M., Sheeber, L. B., Lewinsohn, P. M., & Seeley, J. R. (1995). Targeted prevention of unipolar depressive disorder in an at-risk sample of high school adolescents: A randomized trial of a group cognitive interview. *Journal of the American Academy of Child and Adolescent Psychiatry, 34*, 312-321.
- Ginsburg, G. S., Siqueland, L., Masia-Warner, C., & Hedtke, K. A. (2004). Anxiety disorders in children: Family matters. *Cognitive and Behavioral Practice, 11*, 28-43.
- Heiss, G. E., Berman, W. H., & Sperling, M. B. (1996). Five scales in search of a construct: Exploring continued attachment to parents in college students. *Journal of Personality Assessment, 67*, 102-115.
- Kendall, P. C., Aschenbrand, S. G., & Hudson, J. L. (2003). Child-focused treatment of anxiety. In A. E. Kazdin & J. R. Weisz (Eds.) *Evidence-based psychotherapies for children and adolescents* (pp. 81-100). New York: Guilford Press.
- Kenny, M. (1987). The extent and function of parental-attachment among first-year college students. *Journal of Youth and Adolescence, 16*, 17-29.
- Kovacs, M., Feinberg, T. L., Crouse-Novak, M., Paulauskas, S. L., Pollock, M., & Finkelstein, R. (1984). Depressive disorder in childhood: II. A longitudinal study of the risk for a subsequent Major Depression. *Archives of General Psychiatry, 41*, 643-649.
- Masia, C. L., & Morris, T. L. (1998). Parental factors associated with social anxiety: Methodological limitations and suggestions for integrated behavioral research. *Clinical Psychology: Science and Practice, 5*, 211-228.
- Morris, T. L. (2001). Social phobia. In M. W. Vasey & M. R. Dadds (Eds.), *The developmental psychopathology of anxiety*. (pp. 435-458). New York: Oxford University Press.
- Morris, T. L., & March, J. S. (Eds.). (2004). *Anxiety disorders in children and adolescents* (2nd ed.). New York: Guilford Press.
- Parker, G. (1979). Reported parental characteristics in relation to trait depression and anxiety levels in a non-clinical group. *Australian and New Zealand Journal of Psychiatry, 13*, 260-264.
- Parker, G. (1981). Parental representations of patients with anxiety neurosis. *Acta Psychiatrica Scandinavica, 63*, 33-36.

- Parker, G. (1982). Parental representations and affective symptoms: Examination for a hereditary link. *British Journal of Medical Psychology*, *55*, 57-61.
- Parker, G. (1983). Parental overprotection: A risk factor in psychosocial development. New York: Grune & Stratton.
- Parker, G. (1990). The Parental Bonding Instrument: A decade of research. *Social Psychiatry and Psychiatric Epidemiology*, *25*, 281-282.
- Parker, G., Tupling, H., & Brown, L. B. (1979). A parental bonding instrument. *British Journal of Medical Psychology*, *52*, 1-10.
- Rapee, R. M. (1997). Potential role of childrearing practices in the development of anxiety and depression. *Clinical Psychology Review*, *17*, 47-67.
- Rapee, R. M., & Melville, L. F. (1997). Recall of family factors in social phobia and panic disorder: Comparison of mother and offspring reports. *Depression and Anxiety*, *5*, 7-11.
- Rohde, P., Lewinsohn, P. M., Clarke, G. N., Hops, H., & Seeley, J. R. (2005). The Adolescent Coping with Depression Course: A cognitive-behavioral approach to treatment of adolescent depression. In E. D. Hibbs & P. S. Jensen (Eds.), *Psychosocial treatments for child and adolescent disorders: Empirically-based strategies for clinical practice* (2nd ed., pp. 219-237). Washington, DC: American Psychological Association.
- Stark, K. D., Hoke, J., Ballatore, M., Valdez, C., Scammaca, N., & Griffin, J. (2005). Treatment of child and adolescent depressive disorders. In E. D. Hibbs & P. S. Jensen (Eds.), *Psychosocial treatments for child and adolescent disorders: Empirically-based strategies for clinical practice* (2nd ed., pp. 239-265). Washington, DC: American Psychological Association.
- Turner, S. M., Beidel, D. C., & Dancu, C. V. (1996). *Social Phobia and Anxiety Inventory Manual*. North Tonawanda, NY: Multi-Health Systems.
- Turner, S. M., Beidel, D. C., Dancu, C. V., & Stanley, M. A. (1989). An empirically derived inventory to measure social fears and anxiety: The Social Phobia and Anxiety Inventory. *Psychological Assessment*, *1*, 35-40.
- U.S. Department of Health and Human Services. (1999). *Mental health: A report of the Surgeon General—Executive Summary*. Rockville, MD: Author.
- Vasa, R. A., & Pine, D. S. (2004). Neurobiology. In T. L. Morris & J. S. March (Eds.), *Anxiety disorders in children and adolescents* (2nd ed.). New York: Guilford Press.
- Wood, J. J., McLeod, B. D., Sigman, M., Hwang, W. Ch., & Chu, B. C. (2003). Parenting and childhood anxiety: Theory, empirical findings, and future directions. *Journal of Child Psychology and Psychiatry*, *44*, 134-151

Author's Note:

Karla Anhalt, Ph.D., is Assistant Professor and Co-Coordinator of the School Psychology Program, Department of Educational Foundations and Special Services, Kent State University, Kent, OH.

Tracy L. Morris, Ph.D., is Professor and Coordinator of the Clinical Child Program, Department of Psychology, West Virginia University, Morgantown, WV.

Correspondence concerning this article should be addressed to:

Karla Anhalt, Ph.D.
 Kent State University
 405 White Hall
 Kent, OH 44242
 Phone: 330-672-0582
 Fax: 330-672-2512
 E-mail: kanhalt@kent.edu