

Association between Independent Reports of Maternal Parenting Stress and Children's Internalizing Symptomatology.

By: Christina M. Rodriguez

Rodriguez, C. M. (2011). Association between Independent Reports of Maternal Parenting Stress and Children's Internalizing Symptomatology. *Journal of Child and Family Studies*, 20(5), 631-639.

Made available courtesy of Springer Verlag. The original publication is available at:
<http://link.springer.com/article/10.1007%2Fs10826-010-9438-8>

*****Reprinted with permission. No further reproduction is authorized without written permission from Springer Verlag. This version of the document is not the version of record. Figures and/or pictures may be missing from this format of the document. *****

Abstract:

Although considerable research has investigated parenting stress and children's externalizing behavior problems, comparatively less has considered parenting stress in relation to children's internalizing difficulties. Even less research on parenting stress has incorporated children's report of their internalizing symptoms or the potential mediating role of children's attributional style. The current study hypothesized that children's independent reports of internalizing symptoms would be associated with mothers' reports of parenting stress through children's attributional style. A community sample of 92 mother-child dyads participated. Results suggest maternal parenting stress from both child and parent sources were significantly associated with children's anxious and depressive symptoms. Parenting stress was associated with children's internalizing symptoms partially mediated by children's maladaptive attributional style, primarily negative attributions for positive outcomes. Findings are discussed in terms of future directions to tease apart specific areas of parenting stress that may be most pertinent as well as to explore other cognitive mechanisms in children that may relate to parenting stress and children's adjustment.

Keywords: parenting | parenting stress | child development | family studies | internalizing behavior | child behavior

Article:

Introduction

Whereas children's externalizing problems are characterized by overt disruptive behaviors such as defiance, aggression, or overactivity (Achenbach and Rescorla 2001; American Psychiatric Association [APA] 2000), internalizing problems are typically more covert in nature.

Internalizing difficulties in children, such as depression and anxiety, more likely involve inhibition, withdrawal, or mood symptoms (Achenbach and Rescorla 2001; APA 2000). The needs of children displaying internalizing issues are often overlooked, requiring greater inference because symptoms are not readily observed (Coyle et al. 2003). Indeed, mothers often overestimate externalizing problems but underestimate internalizing problems in their children (Clarke-Stewart et al. 2003). Despite the pervasiveness of externalizing difficulties in children (APA 2000) and their potential long-term effects (Loeber 1991), proportionally more mental health problems in adulthood reflect internalizing problems (Hartung and Widiger 1998). For instance, depressive symptoms in childhood predict depression and anxiety in young adulthood (Aronen and Soininen 2000). Thus, understanding correlates of internalizing difficulties in children remains an important area of inquiry.

One of the commonalities between depressive and anxious symptomatology involves the well-known cognitive process of attributional style. Based on attributional style theory (Abramson et al. 1989), a maladaptive approach is evident when positive events are ascribed to external, specific, unstable causes and negative events to internal, global, and stable causes. Maladaptive explanatory styles are linked to the development of internalizing symptoms of depression (Abramson et al. 1989, 1978; Gladstone and Kaslow 1996) as well as anxiety (Kagan et al. 2004; Luten et al. 1997). Thus, maladaptive explanatory styles may underlie the internalizing problems experienced by children.

Other communalities identified in children's psychological difficulties predictably involve parenting, wherein parenting behavior and child adjustment are impacted by environmental and developmental variables in addition to characteristics of a parent and child (Abidin 1992). One relatively well studied relevant parenting construct pertains to the stress parents experience given the demands unique to parenting (Deater-Deckard 1998, 2004). Stress arising from a parent's own life unrelated to the child's characteristics becomes more challenging to manage because of the simultaneous demands needed to respond to the child (Deater-Deckard 2004). Parenting stress has been conceptualized to derive from characteristics reflective of the child, the parent, and the parent-child relationship that strain the parent-child system (Abidin 1992; Deater-Deckard 2004). Such parenting stress is often assessed with such measures as the Parenting Stress Index (PSI; Abidin 1995), although other researchers have examined parents' daily hassles or major life events rather than parenting stress specifically (e.g., Barry et al. 2005; Creasey and Reese 1996; Crnic et al. 2005). Given the unique demands of parenting (Deater-Deckard 2004), the current study was specifically interested in the role of parenting stress, directly relevant to the parent-child system, rather than parents' hassles and life events.

Considerable interest in the stress associated with parenting has generated a substantial body of research highlighting the connection between parenting stress and children's adjustment (see Deater-Deckard 2004 for review). Theoretically, this connection is envisioned as bi-directional, wherein the parent and child reciprocally influence each other which thereby impacts stress within the parent-child system (Deater-Deckard 2004). Consequently, it is important to

underscore parenting stress does not necessarily cause adjustment problems in children. Indeed, child behavior problems play a role in exacerbating parental stress across time (Williford et al. 2007). Despite advances in the literature on this topic, research has not ventured far into clarifying the association of parenting stress with children's internalizing symptoms nor has the literature addressed some of the methodological shortcomings stemming from source bias.

To date, several studies have established a connection between elevated parental stress and children's externalizing difficulties. For example, parents who experience more daily hassles report more disruptive behavior problems in their children (Barry et al. 2005). Likewise, both parenting hassles and major stressful life events are positively associated with parents' reports of children's behavior problems (Crnic et al. 2005). Specifically with regard to parenting stress, several studies have documented an association between greater externalizing problem behaviors in children and overall parenting stress (e.g., Blader 2006; Creasey and Jarvis 1994; Eyberg et al. 1992).

Relatively less attention has been paid to the association between parenting stress and children's internalizing symptoms. Some research has linked parent stress to combined (i.e., undifferentiated from externalizing) child problem behavior (Creasey and Reese 1996; Crnic et al. 2005). However, other research has concentrated on internalizing difficulties specifically. Parental hassles and major life events were associated with childhood internalizing difficulties among preschoolers (Bayer et al. 2006). Furthermore, abbreviated versions of the Parenting Stress Index were weakly associated with teacher-reported child internalizing problems (Anthony et al. 2005) but more strongly associated with parent reported child internalizing problems (Costa et al. 2006; Hart and Kelley 2006; Mesman and Koot 2000). Thus, this literature suggests an association between increased stress in parents and children's internalizing difficulties.

Methodologically, however, researchers have largely relied on parents to convey both their stress level and children's problem behavior, externalizing or internalizing. This dependence on parents' report raises concerns regarding source bias, which may be particularly problematic because part of the association between parenting stress and reported child problem behavior may be mediated by parents' negative perceptions of the child (Renk et al. 2007). Some notable exceptions to such source bias shortcomings in this literature include a parenting stress study that obtained observations of child negative problem behavior in addition to parent report (Crnic et al. 2005). Findings from another study suggested teacher reported problem child behavior, both internalizing and externalizing, was weakly associated with parenting stress (Anthony et al. 2005) whereas a different study observed a relationship between parenting stress and disruptive behavior only if the parent, not the teacher, was reporting on the child's behavior (Barry et al. 2005). The complexities of such cross-informant differences between parent and teacher report on these constructs have been acknowledged previously (see Mesman and Koot 2000). One study obtained reports of overall child problem behavior, inclusive of internalizing issues, from teachers and mothers and compared findings to parenting stress from both parents, although

information was not obtained from children directly, nor was the specific connection to internalizing problems disentangled (Creasey and Reese 1996).

Remarkably little research in this area has queried children regarding their emotional or behavioral difficulties, despite calls to employ multi-informant approaches when assessing children (Semrud-Clikeman et al. 2003). Correspondence between parent and child report of child problems is typically low to moderate, particularly for internalizing issues that are more difficult for observers to detect (Achenbach et al. 1987; Greenbaum et al. 1994). Most importantly, these disparities may not simply reflect measurement error but true differences in perspectives (Greenbaum et al. 1994). Therefore, research on parenting stress and child adjustment could be informed by including the child's perspective regarding internalizing problems that has been typically ignored in the literature thus far. One study did indeed examine parent-reported daily hassles and parent-reported internalizing problems of children as well as child-reported anxiety and depressive symptomatology (Banez and Compas 1990). Interestingly, parent-reported internalizing symptoms were largely unrelated to children's report of symptoms (only father-reported internalizing was associated with child-reported anxiety), but child-reported depressive and anxious symptomatology was associated with parents' daily hassles (Banez and Compas 1990). This study, albeit not focused on parenting stress, did suggest a meaningful contribution from inclusion of the child's perspective.

Moreover, parenting stress may relate to children's internalizing problems through children's attributional style. As noted earlier, parenting stress can emerge from issues in the parent's life as well as those arising from the child and parent-child relationship (Abidin 1992; Deater-Deckard 2004). Experiencing stress may cultivate a sense of uncontrollability manifest in learned helplessness (Brown and Siegel 1988). Research suggests that parents with emotional difficulties have children with more depressive symptoms, which can reflect both biological and environmental influences (see Lau et al. 2007 for discussion). Theoretically, a parent's stress level may foster an experience of uncontrollability, an attributional style communicated to their children, thereby potentially representing a mechanism by which parenting stress influences children's internalizing problems.

The present study thus attempted to fill gaps in this literature by including children as a key source of information, focusing on internalizing symptoms, as well as proposing attributional style as a mechanism whereby parenting stress may relate to children's internalizing symptoms. Children reported on their internalizing symptoms and attributional style independent of mothers' report of their parenting stress. Although parents' stress in association with children's internalizing has been conceptualized as daily hassles (e.g., Banez and Compas; Bayer et al. 2006) or assessed with abbreviated versions of the Parenting Stress Index (e.g., Costa et al. 2006; Hart and Kelley 2006; Mesman and Koot 2000), the present study focused on parenting stress using the complete Parenting Stress Index. Although the abbreviated version of the PSI relates to the full version (Abidin 1995), the short form contains three broad stress subscales, compared to the range of 13 separate sources of stress in the full version. Thus, utilizing the full version

captures an array of parenting stressors permitting an examination of specific aspects of parenting stress that may be particularly salient in this investigation. Children’s internalizing symptoms were hypothesized to be associated with maternal parenting stress from both child and parent sources, partially mediated by children’s maladaptive attributional style.

Method

Participants

The present investigation involved 92 mother–child dyads who were participants in two separate, larger parenting studies of community samples, one site in New Zealand ($n = 40$) and another in Salt Lake City, Utah ($n = 52$). Mother–child dyads at both sites completed the measures described below with comparable study procedures. Analyses were conducted to identify potential differences between sites (e.g., t test or Chi-square, as appropriate). As seen in Table 1, mothers and children were of virtually identical ages and comparable with respect to representation of minorities across both sites. Mothers in the Utah site had more children ($t(90) = 2.00, p < .05$) and the proportion of boys to girls among children was only marginally significantly different ($\chi^2 = 3.27, p = .07$). However, neither of these two variables was significantly associated with any of the outcome measures. (Controlling for these variables also resulted in either no difference in the results or slightly augmenting the magnitude of the findings; the analyses are thus presented without such controls as more conservative estimates). Most importantly, analyses of differences between the two sites determined that the obtained means across measures were not significantly different. Therefore, the full sample of 92 mother–child dyads was used for the present analyses, and the combined sample had the added advantage of resulting in a more gender-balanced group of children. This combined sample (Table 1) was predominantly White with an average of three children in two-parent homes. The children were an average of 10 years old, approximately evenly distributed by gender.

Table 1

Sample characteristics and outcome measures’ means and standard deviations by site

	Utah sample ($n = 52$) M (SD) or %	New Zealand sample ($n = 40$) M (SD) or %	Combined sample ($n = 92$) M (SD) or %
Parent age (years)	38.62 (6.07)	38.33 (5.45)	38.49 (5.78)

	Utah sample (<i>n</i> = 52) <i>M</i> (<i>SD</i>) or %	New Zealand sample (<i>n</i> = 40) <i>M</i> (<i>SD</i>) or %	Combined sample (<i>n</i> = 92) <i>M</i> (<i>SD</i>) or %
Parent's number of children	3.35 (1.36)	2.83 (1.06)	3.12 (1.26)
Child age	10 years, 4.5 months (1 year, 8 months)	10 years, 9.5 months (1 year, 4 months)	10 years, 6.5 months (1 year, 6 months)
Child sex			
Female (%)	53.8	35.0	54.3
Male (%)	46.2	65.0	45.7
Ethnicity ^a			
White (%)	88.5	87.5	88.0
Minority (%)	11.5	12.5	12.0
Living with partner			
Yes (%)	82.7	72.5	78.3
No (%)	17.3	27.5	21.7
PSI Total score	224.31 (55.55)	216.95 (49.21)	221.11 (52.73)
PSI Parent Domain Total score	122.79 (31.72)	116.18 (27.45)	119.91 (29.96)
PSI Child Domain Total score	103.94 (28.95)	100.70 (26.18)	102.53 (27.68)
CMAS-R Total T-score	49.87 (8.73)	51.50 (10.49)	50.58 (9.51)
CDI Total score	8.02 (6.19)	10.10 (6.13)	8.92 (6.22)
CASQ Total Composite score	5.65 (4.92)	4.60 (4.12)	5.20 (4.62)

	Utah sample (<i>n</i> = 52) <i>M</i> (<i>SD</i>) or %	New Zealand sample (<i>n</i> = 40) <i>M</i> (<i>SD</i>) or %	Combined sample (<i>n</i> = 92) <i>M</i> (<i>SD</i>) or %
CASQ Positive Total score	13.62 (3.40)	12.63 (3.36)	13.18 (3.40)
CASQ Negative Total score	7.96 (2.99)	8.03 (2.68)	7.99 (2.85)

PSI Parenting Stress Index; CMAS-R Revised Children’s Manifest Anxiety Scale; CDI Children’s Depression Inventory; CASQ Children’s Attributional Style Questionnaire

a Minorities in Utah sample include Hispanic and Native American families; in New Zealand, those of Maori (indigenous) descent

Parent-Report of Stress Measure

The Parenting Stress Index (PSI; Abidin 1995) is a well-known measure of general parenting stress, including 101 items on a 5-point Likert scale. The PSI assumes parenting stress cumulatively builds from stressors associated with the parent, the child, or the situation, which collectively contribute to a PSI Total score. The PSI also provides separate Parent Domain and Child Domain scores that capture stressors in those respective areas. The Parent Domain includes scales of Depression, Attachment (emotional investment in the child), Restrictions of Role (perceiving freedoms have been curtailed), Sense of Competence (in the parenting role), Social Isolation, Relationship with Spouse (relationship satisfaction), and Parent Health; the Child Domain measures parents’ stress associated with the child’s Adaptability (child’s ability to adjust to change), Acceptability (child’s match to the parent’s hopes and expectations), Demandingness, Mood (child’s emotional distress), Distractibility, and Reinforcement of Parent (parent–child interactions perceived to be mutually positive). The PSI domain scores are the primary scores of interest in this study, with higher scores indicative of greater perceived stress. The PSI manual reports high levels of internal consistency, with coefficient alphas at .95, .92, and .91 for the PSI Total, Parent Domain, and Child Domain scores, respectively, as well as convergent validity with related measures (Abidin 1995).

Child-Report Measures

The Children’s Attributional Style Questionnaire (CASQ; Kaslow et al. 1978; Seligman et al. 1984) is a 48-item instrument designed to assess attributional style in children ages 8–18 years along three dimensions. Hypothetical situations are presented that focus on internality, stability,

or globality (16 items per dimension), with half of the items involving negative outcomes and half positive outcomes. Children select one of two proffered choices to indicate why they think each hypothetical situation happened. Scores are generated across all positive events for a CASQ Positive Total as well as across all negative events for a CASQ Negative Total, signifying that attributions vary according to the valence of the situation. A CASQ Total Composite score is calculated by subtracting the Negative Total from the Positive Total. Lower Positive Total and Total Composite scores and higher Negative Total scores correspond to a more maladaptive attributional style. Psychometrically, the CASQ demonstrates moderate internal consistency for the Total Composite, Positive Total, and Negative Total scores (.73, .71, and .66, respectively; Seligman et al. 1984). CASQ scores correlate with indices of depression (e.g., Thompson et al. 1998), consistent with the learned helplessness model.

The Children's Depression Inventory (CDI; Kovacs 1983, 1985) is a widely used measure assessing childhood depressive symptoms. Based on 27 items, the CDI presents the child with three statements representing varying degrees of depressive severity. Individual items are summed to provide a CDI Total score, with higher scores suggestive of more severe depressive symptomatology. Kazdin (1990) reports that the CDI has moderate test-retest stability, high internal consistency, and concurrent validity with other depression measures. High coefficient alphas have been reported, ranging from .83 to .94 (Saylor et al. 1984; Smucker et al. 1986).

The Children's Manifest Anxiety Scale-Revised (CMAS-R; Reynolds and Richmond 1978, 1985) is a 37-item self-report measure of anxiety symptoms in children, with each item presented in a Yes/No format. Responses are totaled and converted to a standardized T-score that adjusts for age and gender, with higher CMAS-R Total T-scores indicative of more severe anxious symptomatology. CMAS-R scores correlate more highly with internalizing than externalizing behaviors and its internal consistency is reported at .82 (Reynolds 1982; Reynolds and Richmond 1985).

Procedures

Procedures for both sites were comparable. Approval was obtained from the university institutional review boards of both sites. Consent forms for a larger parenting and discipline study were sent home with children from their school. To be eligible to participate in this portion of the study, a child between the ages of 8–12 had to be available during the data collection for the larger study along with their mothers who were identified primary caregivers. Upon return of the consent form, participants were contacted by phone to arrange a data collection session in the child's home. All parent data was collected via computer administration of the measures, wherein instructions and individual items are presented while the parent inputs their responses into a database anonymously. While mothers were engaged in completing their portion of the study, the target child was removed to a separate area of the home for their role in the study. The

three child-report measures were administered in a counterbalanced order. Instructions and items were read aloud to the children as they read along silently to reduce concerns regarding literacy. Children provided their answers privately on a separate form. After completing the forms, the children were given an envelope to privately submit their responses.

Analyses

Basic analyses were conducted using SPSS 16.0 for Windows. Latent-variable structural equation modeling (SEM) was conducted via maximum likelihood estimates of model coefficients using AMOS 18.0. SEM can evaluate mediation models, permit simultaneous estimation of direct and indirect paths, and provide fit indices to determine the strength of the proposed model. Fit of the model was evaluated using Chi-square, goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), normed fit index (NFI), and root mean square error of approximation (RMSEA) (Byrne 2001; Tabachnick and Fidell 1996). The Chi-square should ideally be non-significant, whereas the Chi-square for the independence model, which tests the absence of relationship among the variables, should be significant (Tabachnick and Fidell 1996). With respect to fit indices, GFI, AGFI, and NFI values greater than .90 are ideal; RMSEA values are ideally .05 or below (Byrne 2001; Tabachnick and Fidell 1996). Better fitting models typically produce consistent results across different indices (Tabachnick and Fidell 1996).

Results

An evaluation of the mean scores obtained in this study suggests all were generally within normal limits, as would be expected in a community sample (see Table 1). With respect to parenting stress, the mean PSI Total score was at the 50th percentile, with the mean Parent Domain at the 50th percentile and the mean Child Domain at the 60th percentile. In terms of children's internalizing symptomatology, children obtained mean T-scores on the CMAS-R at the normative mean, with 10% obtaining scores above a T-score of 60. On the CDI, the obtained mean is comparable to the normative mean, with 9% of the sample obtaining clinically elevated scores on the CDI. Although there are no clinical referents for attributional style, the obtained means are comparable to those previously reported in the literature for non-clinical samples (cf. Nolen-Hoeksema et al. 1992).

A preliminary examination of possible effects due to demographic characteristics identified no significant correlations with child age on any of the child-report measures (all $p > .05$) and no gender differences on the three measures (as would be expected in this prepubertal sample) (all $p > .05$). The partnership status of mothers did not result in significant differences on either mothers' parenting stress or children's internalizing symptoms (all $p > .05$). Mothers' age and

number of children were also not significantly correlated with parenting stress. Therefore, analyses proceeded without covariates.

The correlations of most interest involve the association of the PSI domain scores with the children’s measures. Given the number of correlations of primary interest, the significance level was reduced to .01. As seen in Table 2, maternal parenting stress was significantly positively associated with children’s independent report of anxious and depressive symptomatology, wherein mothers’ elevated parenting stress was related to increased symptoms of depression and anxiety according to their children. With respect to children’s attributional style, the PSI Parent and Child Domain scores were significantly negatively associated with the CASQ Total Composite score, such that greater reported maternal parenting stress was associated with children’s more overall maladaptive attributional style. However, as can be observed in the table, this association is due to the connection of parenting stress with children’s maladaptive attributional style for positive outcomes, not negative outcomes.

Table 2

Correlations between parenting stress and child report measures

	PSI Total score	PSI Parent Domain Total score	PSI Child Domain Total score
CDI Total score	.37**	.32*	.40**
CMAS-R Total T-score	.29*	.25*	.28*
CASQ Total Composite score	-.32*	-.29*	-.36**
CASQ Positive Total score	-.41**	-.38**	-.41**
CASQ Negative Total score	.02	.01	.09

* $p \leq .01$. ** $p \leq .001$

PSI Parenting Stress Index; CDI Children’s Depression Inventory; CMAS Children’s Manifest Anxiety-Revised; CASQ Children’s Attributional Style Questionnaire

Additionally, the PSI Total contains 13 separate subscales (see Methods description above). Although a comprehensive evaluation of the correlations for specific areas of stress represented by these scales would be interesting, the number of correlations would be prohibitive in compounding error and are thus not reported in detail here. Nonetheless, some of the patterns may be informative in guiding future research efforts in this area. Notably, the CDI Total scores and CASQ Positive Total scores were significantly associated (at $p \leq .01$) across all subscales of

the PSI Child Domain. Specifically within the PSI Child Domain, the CDI Total, CMAS-R Total, and CASQ Positive Total scores appeared most strongly associated with stress the parent experienced because of the child's mood and the child's demandingness. Within the PSI Parent Domain, the most consistent significant findings were noted for parenting stress from mothers' own depression and difficult spouse relations.

For the SEM analysis, the latent variable for Child Internalizing included the CDI Total and CMAS-R Total scores and the latent variable for Parenting Stress included the PSI Parent and Child Domains (see Fig. 1). Given the preliminary analyses highlighting maladaptive attributional style for positive events, scores from this variable were entered as a partial mediator between parenting stress and child internalizing symptoms. A partial mediation model, with a good fit to the data, yielded an R² of .44 for child internalizing symptoms. In terms of fit indices, as would be hoped, the default Chi-square was non-significant ($\chi^2 = 1.30$, $df = 3$, $p = .73$) whereas the independence Chi-square, which should confirm a significant relationship detected in the model, was indeed significant ($\chi^2 = 165.71$, $df = 10$, $p < .001$). Fit indices were in the acceptable range, with the GFI calculated at .994 and the AGFI (which adjusts for the number of parameters) at .971. The model also yielded an NFI of .992, which is actually sensitive to smaller sample sizes. The obtained RMSEA was .01, with a confidence interval of .00 to .12. In terms of the path coefficients, parental stress was significantly directly and indirectly ($\beta = .22$) associated with children's internalizing symptomatology such that elevated parenting stress was associated with greater internalizing problems through maladaptive attributional style for positive events in children.

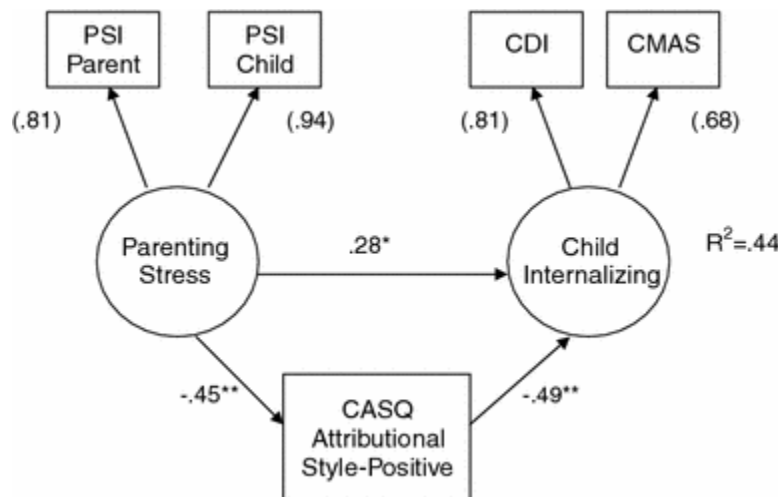


Fig. 1

Structural equation model results with standardized estimates (N = 92). * $p \leq .05$; ** $p \leq .001$. PSI Parenting Stress Index; CDI Children's Depression Inventory; CMAS Children's Manifest Anxiety-Revised; CASQ Children's Attributional Style Questionnaire

Discussion

The present investigation evaluated whether children's independent reports of internalizing symptoms were associated with mothers' reports of parenting stress, and whether children's attributional style may partially account for that association. A community sample of 92 mother-child dyads from two different sites participated. Findings from the present study support the hypothesis that maternal parenting stressors from both the child and parent domain were associated with children's anxious and depressive symptoms. Furthermore, maternal parenting stress was associated with overall maladaptive attributional style in children, although this association largely reflected children's problematic explanations for positive events in their lives. This maladaptive attributional style for positive events in children partially mediated the association between parental stress and children's internalizing symptoms.

Consistent with the limited literature suggesting parents' stress relates to children's internalizing (e.g., Banez and Compas 1990), mothers who report experiencing higher parenting stress on the Parenting Stress Index have children who indicate they are more depressed and anxious. Although some may be tempted to speculate on potential causal/directional sequences implied in this association, recall the theoretical conceptualization as bi-directional (Deater-Deckard 2004). Children struggling with internalizing symptoms may exacerbate the stress parents experience just as stressed parents may impact their children's internalizing symptoms; hence, this process may evolve and be intricately cyclical and difficult to track, even in longitudinal designs.

Interestingly, indications from the present analysis suggest children's depressive symptoms were associated with all of the parenting stressors in the PSI Child Domain, particularly such that children's depressive and anxious symptoms were associated with parents' stress regarding the child's mood and demandingness. Although full statistical analyses of these associations could not be considered because of the large number of correlations, this pattern lends construct validity to the PSI Mood subscale. Additionally, both depressive and anxious symptoms in children appeared most associated with parents' own depression, consistent with earlier research (Bayer et al. 2006; Marchand et al. 2004) suggestive of shared environmental and biological markers (Cicchetti and Toth 1998). Additionally, internalizing symptoms appeared associated with parenting stress arising from spouse relations, paralleling earlier research on marital quality (Marchand et al. 2004). Therefore, using the full PSI hinted at some potential directions for future inquiry. Continued research in this area could unravel how children's internalizing symptoms relate to selective aspects of parents' stress, with a sample large enough to reasonably adjust for the power issues involved in such analyses.

The present study also examined maternal parenting stress in relation to children's reported maladaptive attributional style given its connection to depression (Gladstone and Kaslow 1996) and anxiety (Kagan et al. 2004). Greater parenting stress was indeed significantly associated with children's maladaptive attributional style, albeit primarily because of children's explanatory style for positive outcomes. In fact, children's attributional style for negative outcomes was unrelated

to any PSI scores assessing maternal stress. Previous research has actually underscored the relative importance of a maladaptive attributional style specifically for positive events in children (Friedlander et al. 1986). Moreover, this maladaptive attributional style partially accounted for the connection between parenting stress and internalizing symptoms. Mothers experiencing greater stress have children who, when confronted with a positive event, tend to attribute the cause to external, specific, and unstable reasons, which in turn relates to internalizing difficulties. Such findings suggest that researchers may want to consider how parents may sway cognitive processing in children that could place them at risk to develop subsequent psychological difficulties.

Future studies in this area should attempt to address some of the limitations in the present study, including sample characteristics. Combining the two sites resulted in greater power and a more heterogeneous, gender-balanced group of children, and scores were in fact comparable across sites. Yet the study thereby collapsed potential cross-cultural differences that may operate in some unidentified manner given the sites were in two different countries. The study included only mothers and relatively little representation of minorities. Future research should include more ethnically diverse samples and fathers (especially given that children's internalizing symptoms reported by fathers, not mothers, were associated with child-report of internalizing symptoms in Banez and Compas 1990). Similarly, future research should incorporate an examination of the potential interactive role of socioeconomic stress that could exacerbate parental stress as well as children's emotional difficulties. Finally, this non-clinical sample was less likely to demonstrate parenting stress or children's internalizing problems, as evidenced by their normative mean scores across measures. As a community sample, the current findings may differ from those utilizing samples wherein children in fact manifest internalizing disorders, which would represent an important extension of the current study findings.

Another particularly intriguing direction for future research would expand the multi-informant design, potentially including other sources of information (e.g., teachers, as in Anthony et al. 2005). For example, although the present study focused on employing children to report on their internalizing symptoms, children could report on their perception of parents' stress, with parents adding a report on their children's internalizing problems. Such approaches may afford a more comprehensive perspective on the constructs of interest.

Overall, findings from this study contribute to the growing body of research indicating that, even from the child's perspective, parenting stress relates to children's adjustment. Indeed, the present findings underscore the importance of practitioners including the perspective of children in reporting on their own adjustment, particularly given that internalizing difficulties and attributional style are covert processes about which children have unique access (Greenbaum et al. 1994). Moreover, the association of parenting stress with cognitive mechanisms characteristic of internalizing problems suggests that parents' stress may covary with emergence of children's maladaptive attributional style. Professionals working with families may consider how modifications in children's cognitive attributions may not only alter the trajectory of

internalizing difficulties in children but indirectly influence parenting stress in mothers. Alternatively, interventions directed at mitigating parenting stress may also influence children's cognitive styles that in turn diminish children's internalizing symptoms. The potential in these reciprocal processes highlight the value of how working with individuals within families can have broader systemic effects.

References

- Abidin, R. R. (1992). The determinants of parenting behavior. *Journal of Clinical Child Psychology, 21*, 407–412.
- Abidin, R. R. (1995). *Parenting stress index manual* (3rd ed.). Charlottesville, VA: Pediatric Psychology Press.
- Abramson, L. Y., Seligman, M. E. P., & Teasdale, J. D. (1978). Learned helplessness in humans: Critique and reformulation. *Journal of Abnormal Psychology, 87*, 49–74.
- Abramson, L. Y., Metalsky, G. I., & Alloy, L. B. (1989). Hopelessness depression: A theory-based subtype of depression. *Psychological Review, 96*, 358–372.
- Achenbach, T. M., & Rescorla, L. A. (2001). *Manual for the ASEBA school-age forms and profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, and Families.
- Achenbach, T. M., McConaughy, S. H., & Howell, C. T. (1987). Child/Adolescent behavioral and emotional problems: Implications of cross-informant correlations for situational specificity. *Psychological Bulletin, 101*, 213–232.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- Anthony, L. G., Anthony, B. J., Glanville, D. N., Naiman, D. Q., Waanders, C., & Shaffer, S. (2005). The relationship between parenting stress, parenting behaviour and preschoolers' social competence and behavior problems in the classroom. *Infant and Child Development, 14*, 133–154.
- Aronen, E. T., & Soininen, M. (2000). Childhood depressive symptoms predict psychiatric problems in young adults. *Canadian Journal of Psychiatry, 45*, 465–470.
- Banez, G. A., & Compas, B. E. (1990). Children's and parents' daily stressful events and psychological symptoms. *Journal of Abnormal Child Psychology, 18*, 591–605.
- Barry, T. D., Dunlap, S. T., Cotten, S. J., Lochman, J. E., & Wells, K. C. (2005). The influence of maternal stress and distress on disruptive behavior problems in boys. *Journal of the American Academy of Child and Adolescent Psychiatry, 44*, 265–273.

- Bayer, J. K., Sanson, A. V., & Hemphill, S. A. (2006). Parent influences on early childhood internalizing difficulties. *Journal of Applied Developmental Psychology, 27*, 542–559.
- Blader, J. C. (2006). Which family factors predict children's externalizing behaviors following discharge from psychiatric inpatient treatment? *Journal of Child Psychology and Psychiatry, 47*, 1133–1142.
- Brown, J. D., & Siegel, J. M. (1988). Attributions for negative life events and depression: The role of perceived control. *Journal of Personality and Social Psychology, 54*, 316–322.
- Byrne, B. M. (2001). *Structural equation modeling with AMOS: Basic concepts, application, and programming*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Cicchetti, D., & Toth, S. L. (1998). The development of depression in children and adolescents. *American Psychologist, 53*, 221–241.
- Clarke-Stewart, K. A., Allhusen, V. D., McDowell, D. J., Thelen, L., & Call, J. D. (2003). Identifying psychological problems in young children: How do mothers compare with child psychiatrists? *Journal of Applied Developmental Psychology, 23*, 589–624.
- Costa, N. M., Weems, C. F., Pellerin, K., & Dalton, R. (2006). Parenting stress and childhood psychopathology: An examination of specificity to internalizing and externalizing symptoms. *Journal of Psychopathology and Behavioral Assessment, 28*, 113–122.
- Coyle, J. T., Pine, D. S., Charney, D. S., Lewis, L., Nemeroff, C. B., Carlson, G. A., et al. (2003). Depression and bipolar support alliance consensus statement on the unmet needs in diagnosis and treatment of mood disorders in children and adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry, 42*, 1494–1503.
- Creasey, G. L., & Jarvis, P. A. (1994). Relationships between parenting stress and developmental functioning among 2-year-olds. *Infant Behavior and Development, 17*, 423–429.
- Creasey, G., & Reese, M. (1996). Mothers' and fathers' perceptions of parenting hassles: Association with psychological symptoms, nonparenting hassles, and child behavior problems. *Journal of Applied Developmental Psychology, 17*, 393–406.
- Crnic, K. A., Gaze, C., & Hoffman, C. (2005). Cumulative parenting stress across the preschool period: Relations to maternal parenting and child behaviour at age 5. *Infant and Child Development, 14*, 117–132.
- Deater-Deckard, K. (1998). Parenting stress and child adjustment: Some old hypotheses and new questions. *Clinical Psychology: Science and Practice, 5*, 314–332.
- Deater-Deckard, K. (2004). *Parenting stress*. New Haven: Yale University Press.

- Eyberg, S. M., Boggs, S. R., & Rodriguez, C. M. (1992). Relationships between maternal parenting stress and child disruptive behavior. *Child and Family Behavior Therapy, 14*, 1–9.
- Friedlander, S., Traylor, J. A., & Weiss, D. S. (1986). Depressive symptoms and attributional style in children. *Personality and Social Psychology Bulletin, 12*, 442–453.
- Gladstone, T. R. G., & Kaslow, N. J. (1996). Depression and attributions in children and adolescents: A meta-analytic review. *Journal of Abnormal Child Psychology, 23*, 597–606.
- Greenbaum, P. F., Dedrick, R. F., Prange, M. E., & Friedman, R. M. (1994). Parent, teacher, and child ratings of problem behaviors of youngsters with serious emotional disturbances. *Psychological Assessment, 6*, 141–148.
- Hart, M. S., & Kelley, M. L. (2006). Fathers' and mothers' work and family issues as related to internalizing and externalizing behavior of children attending day care. *Journal of Family Issues, 27*, 252–270.
- Hartung, C. M., & Widiger, T. A. (1998). Gender differences in the diagnosis of mental disorders: Conclusions and controversies of the DSM-IV. *Psychological Bulletin, 123*, 260–278.
- Kagan, L. J., MacLeod, A. K., & Pote, H. L. (2004). Accessibility of causal explanations for future positive and negative events in adolescents with anxiety and depression. *Clinical Psychology and Psychotherapy, 11*, 177–186.
- Kaslow, N. J., Tanenbaum, R. L., & Seligman, M. E. P. (1978). *The KASTAN-R: A children's attributional style questionnaire (KASTAN-R-CASQ)*. Unpublished manuscript, University of Pennsylvania, Department of Psychology, Philadelphia.
- Kazdin, A. E. (1990). Childhood depression. *Journal of Child Psychology and Psychiatry, 31*, 121–160.
- Kovacs, M. (1983). *The children's depression inventory: A self-rated depression scale for school-aged youngsters*. Unpublished manuscript, University of Pittsburgh School of Medicine, Pittsburgh.
- Kovacs, M. (1985). The children's depression inventory (CDI). *Psychopharmacology Bulletin, 21*, 995–998.
- Lau, J. Y. F., Rijdsdijk, F., Gregory, A. M., McGuffin, P., & Eley, T. C. (2007). Pathways to childhood depressive symptoms: The role of social, cognitive, and genetic risk factors. *Developmental Psychology, 43*, 1402–1414.
- Loeber, R. (1991). Antisocial behaviour: More enduring than changeable? *Journal of the American Academy of Child and Adolescent Psychiatry, 30*, 393–397.

- Luten, A. G., Ralph, J. A., & Mineka, S. (1997). Pessimistic attributional style: Is it specific to depression versus anxiety versus negative affect? *Behaviour Research and Therapy*, *35*, 703–7119.
- Marchand, J. F., Schedler, S., & Wagstaff, D. A. (2004). The role of parents' attachment orientations, depressive symptoms, and conflict behaviors in children's externalizing and internalizing behavior problems. *Early Childhood Research Quarterly*, *19*, 449–462.
- Mesman, J., & Koot, H. M. (2000). Common and specific correlates of preadolescent internalizing and externalizing psychopathology. *Journal of Abnormal Psychology*, *109*, 428–437.
- Nolen-Hoeksema, S., Girgus, J. S., & Seligman, M. E. P. (1992). Predictors and consequences of childhood depressive symptoms: A five-year longitudinal study. *Journal of Abnormal Psychology*, *101*, 405–422.
- Renk, K., Roddenberry, A., Oliveros, A., & Sieger, K. (2007). The relationship of maternal characteristics and perceptions of children to children's emotional and behavioral problems. *Child and Family Behavior Therapy*, *29*, 37–57.
- Reynolds, C. R. (1982). Convergent and divergent validity of the revised children's manifest anxiety scale. *Educational and Psychological Measurement*, *42*, 1205–1211.
- Reynolds, C. R., & Richmond, B. O. (1978). What I think and feel: A revised measure of children's manifest anxiety. *Journal of Abnormal Child Psychology*, *6*, 271–280.
- Reynolds, C. R., & Richmond, B. O. (1985). *Revised children's manifest anxiety scale (CMAS) manual*. Los Angeles: Western Psychological Services.
- Saylor, C. F., Finch, A. J., Spirito, A., & Bennett, B. (1984). The children's depression inventory: A systematic evaluation of psychometric properties. *Journal of Consulting and Clinical Psychology*, *52*, 955–967.
- Seligman, M. E. P., Peterson, C., Kaslow, N. J., Tanenbaum, R. L., Alloy, L. B., & Abramson, L. Y. (1984). Attributional style and depressive symptoms among children. *Journal of Abnormal Psychology*, *93*, 235–238.
- Semrud-Clikeman, M., Bennett, L., & Guli, L. (2003). Assessment of childhood depression. In C. R. Reynolds & R. W. Kamphaus (Eds.), *Handbook of psychological assessment of children: Personality, behavior, and context* (2nd ed., pp. 259–290). New York: Guilford.
- Smucker, M. R., Craighead, W. E., Craighead, L. W., & Green, B. J. (1986). Normative and reliability data for the children's depression inventory. *Journal of Abnormal Child Psychology*, *14*, 25–40.

Tabachnick, B. G., & Fidell, L. S. (1996). *Using multivariate statistics* (3rd ed.). New York: Harper Collins.

Thompson, M., Kaslow, N. J., Weiss, B., & Nolen-Hoeksema, S. (1998). Children's attributional style questionnaire-revised: Psychometric examination. *Psychological Assessment, 10*, 166–170.

Williford, A., Calkins, S. D., & Keane, S. P. (2007). Predicting change in parenting stress across early childhood: Child and maternal factors. *Journal of Abnormal Child Psychology, 35*, 251–263.