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Paternal Depressive Symptoms and Adolescent Functioning: The Moderating Effect of Gender and Father Hostility

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Abstract

This study examined the longitudinal relationship between paternal depressive symptoms, paternal hostility, and adolescent functioning in a community sample of 451 families. Paternal depressive symptoms were a strong predictor of adolescent outcome, even after controlling for family demographic variables, maternal depressive symptoms, and previous adolescent symptoms. Adolescent gender and perception of paternal hostility moderated this association such that females reporting high paternal hostility were particularly vulnerable to the adverse effects of paternal depressive symptoms. Maternal and paternal depressive symptoms had an additive, rather than interactive, effect on adolescent functioning. These results contribute to our knowledge of the interpersonal processes by which depression runs in families and highlight the importance of including fathers in developmental research on adolescent internalizing problems.

Keywords

fathers; adolescent adjustment; depressive symptoms; gender; paternal hostility

A considerable amount of research has documented the adverse effects of parental depression (for review, see Goodman & Gotlib, 2002) and critical family interactions (e.g., Sheeber, Hops, & Davis, 2001) on the social and psychological development of adolescents. These literatures have been limited by several factors. First, fathers have been dramatically underrepresented in developmental research (for review, see Phares, 1992). Second, most studies of paternal depression and offspring development have failed to control for the effects of maternal depression (see Kane & Garber, 2004). Third, little is known about gender differences in adolescent vulnerability to depressive family environments (Hammen, 1991). Finally, research on intergenerational psychopathology has predominately used clinical samples and cross-sectional design. Controlling for maternal depressive symptoms and previous adolescent symptoms, the present study used longitudinal data from a large community sample to examine adolescent gender and perceptions of father hostility as moderators of the association between paternal and adolescent functioning.

Adolescent Depression

Depression is a prevalent and serious problem during adolescence. By age nineteen, 35% of adolescent females and 19% of adolescent males will experience at least one episode of clinical depression (Lewinsohn, Rohde, & Seeley, 1998), which has been associated with serious risks including substance abuse, suicide, and impaired academic achievement (Field, Diego, & Sanders, 2001). Despite these risks and the fact that the onset of adult depression

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often occurs in adolescence (Rao, Hammen, & Daley, 1999), data on the psychosocial characteristics of depression during the teenage years are limited (see Essau & Petermann, 1999). For example, the majority of research on adolescent depression has relied on clinical samples which are not representative of the general population of adolescents (Costello, 1993). Although diagnostic criteria and categorical approaches can be informative about depression, power to detect effects may be compromised with dichotomous data. Research has typically supported continuous approaches, indicating that there is no clear, discrete cut-off point separating seriously depressed individuals from those experiencing subclinical depression with fewer than the required levels of symptoms for a clinical diagnosis (see Hankin, 2006). A substantial proportion of adolescents experience subdiagnostic depressive symptoms, which have a high recurrence rate and have been linked to a wide range of psychopathology including major depression, anxiety disorders, substance use, and suicidal behavior (Fergusson, Horwood, Ridder, & Beautrais, 2005; Lewinsohn, Solomon, Seeley, & Zeiss, 2000).

The epidemiology of adolescent depression has consistently demonstrated that adolescent girls experience significantly more depression than boys in both severity and frequency (Hankin, Mermelstein, & Roesch, 2007); this gender difference persists across the lifespan (Eaton et al., 1997). Considering the vast amount of work which has identified gender differences in depression, surprisingly little research has examined the developmental mechanisms through which adolescent girls come to be at greater risk than boys (Peterson, Sargiani, & Kennedy, 1991). For example, few studies have examined whether risk for intergenerational psychopathology in offspring of depressed parents varies as a function of child gender (Goodman & Gotlib, 2002). Within this limited research, findings have been equivocal. Davies & Windle (1997) found that boys were more susceptible than girls to affectively ill family environments through middle childhood, with this pattern tending to reverse during adolescence. In another study, the likelihood of adolescent girls being currently depressed was unrelated to paternal depression, whereas adolescent boys were more likely to be currently depressed if their father had a history of depression (Eberhart, Shih, Hammen, & Brennan, 2006). Other work has failed to find gender differences in offspring risk for intergenerational depression (e.g., Currier, Mann, Oquendo, Galfalvy, & Mann, 2006).

Father and Adolescent Adjustment

Research on child and adolescent psychopathology has historically focused on attributes of the mother, limiting the understanding of fathers' role in offspring development. However, a growing body of work has associated paternal depression with adolescent risk for psychological problems (for recent meta-analyses, see Connell & Goodman, 2002; Kane & Garber, 2004). It appears that the degree of offspring risk associated with paternal psychopathology is comparable to that associated with maternal psychopathology (Jacob & Johnson, 1997; Phares, 1992). One limitation in this area of research is the dearth of studies examining paternal depression and adolescent outcome after controlling for maternal depression (Kane & Garber, 2004). Some data suggest that paternal mental health may moderate the effects of maternal depression on child adjustment (for review, see Goodman & Gotlib, 1999), although little is known about whether the reverse is true; that is, whether the effects of paternal depression on offspring outcome vary as a function of maternal depression.

The impact of parenting on adolescent adjustment is influenced by how adolescents perceive their parents (Bronfenbrenner, 1979; Powers, Welsh, & Wright, 1994). Adolescent report of fathers' behavior, for example, is strongly related to adolescent depression (Forehand & Nousiainen, 1993; Plunkett, Henry, Robinson, Behnke, & Falcon, 2007; Sheeber, Davis,

Leve, Hops, & Tildesley, 2007). Some cross-sectional evidence indicates that father-adolescent relations may moderate the impact of paternal psychopathology on adolescent adjustment (e.g., Bosco, Renk, Dinger, Epstein, & Phares, 2003). In one longitudinal study, adolescent perceptions of low closeness in the father-adolescent relationship elevated adolescent risk in relation to fathers' depressive symptoms (Reeb & Conger, 2009), although specific mechanisms underlying this process (e.g., fathers' expression of negative affect and behaviors toward offspring) were not examined.

One process by which parental hostility may influence intergenerational risk for depression is that depressed mood increases parents' irritability, resulting in more hostility towards their children and, in consequence, increased child adjustment problems. Parental depression has been shown to increase the risk of parental hostility towards children (Conger et al., 1992), and adolescents who experience less supportive and more conflictual relationships with their fathers are at increased risk for clinical and sub-clinical depression (e.g., Sheeber et al., 2007; Smetana, 1996). This process may be especially true for fathers. Low and Stocker (2005) found that although both mother-child and father-child hostility were linked to offspring maladjustment, only the fathers' depressed mood was linked to children's internalizing problems indirectly through father-child hostility. Similarly, Parke and colleagues (2004) found parent depression to be associated with hostile parenting for mothers and fathers, but only paternal hostility was associated with higher levels of child internalizing symptoms.

Present Study

The purpose of the present study is to evaluate the prospective effects of paternal depressive symptoms, paternal hostility, and adolescent gender on adolescent functioning while controlling for other factors commonly associated with adolescent depression including family demographic variables, prior adolescent depressive symptoms, and maternal depressive symptoms. The first objective was to examine whether the impact of paternal depressive symptoms on adolescent functioning is moderated by adolescent gender, adolescent perception of father hostility, and/or maternal depressive symptoms. We expected increased risk in females, adolescents reporting high paternal hostility, and adolescents with mothers experiencing high levels of depressive symptoms (H_1). The second goal was to examine the three-way interaction of gender by paternal depressive symptoms by paternal hostility. We hypothesized that adolescent girls would be more depressed than boys at higher levels of paternal depressive symptoms when paternal hostility was high (H_2).

Method

Participants and Procedures

The sample includes 451 adolescents (236 female, 215 male) from two-parent intact families in rural Iowa. The study began in 1989 when the 7th grade adolescents averaged 13.2 years of age. Participants were from predominately middle- and lower-middle-class families who resided on farms (34%), in non-farm rural areas (12%), or in small towns (54%). Due to the ethnic composition of the area, all families were European-American. Of the original 451 families, approximately 95% of the sample remained in the study at Year 2. No significant differences in parents' age, family income, or mothers' level of education were found between participants remaining in the study compared to those who dropped out. Fathers not in the analyses averaged 12.74 years of education compared to 13.57 for those who remained in the study, a statistically significant difference ($p < .05$).

Measures

Depressed mood—Parent and adolescent depressive symptoms were assessed using the self-reported 13-item *SCL-90-R* Depression Subscale (Derogatis, 1983). The *SCL-90-R* has demonstrated reliability and validity as a measure of psychological distress and has been used successfully in many studies of adults and adolescents (e.g., Essau, 2004). In our sample, internal consistencies for *SCL-90-R* depression were satisfactory at Year 1 (fathers α = .81; mothers α = .87; adolescents α = .79) and Year 2 (adolescents α = .89). Raw score means for fathers (*M* = .45, *SD* = .42) and mothers (*M* = .60, *SD* = .50) were somewhat higher than the mean for the normative non-patient sample (*M* = .36, *SD* = .44) reported by Derogatis (1983). Adolescent depressive symptoms at Year 1 for boys (*M* = .57, *SD* = .54) were not statistically different from those of girls (*M* = .67, *SD* = .63). At Year 2, girls' symptoms (*M* = .56, *SD* = .48) were significantly higher than those of boys (*M* = .42, *SD* = .45); *t* (1) = 3.05 (*p* < .001). At Years 1 and 2, both genders reported fewer symptoms than the reported mean for the adolescent normative sample (*M* = .80, *SD* = .69).

Paternal hostility—Adolescent perceptions of father hostility were assessed using the Father Hostility subscale of Conger's (1989) Behavioral Affect Rating Scale (BARS), which consists of twelve items on the problematic aspects of within-family social interaction. On a 7- point scale, responses range from 1 (*never*) to 7 (*always*) on items such as "how often does he ignore you when you tried to talk to him", "how often does he try to make you feel guilty", and "how often does he criticize you or your ideas". Because our goal was to assess paternal hostility and not physical abuse, one item was excluded (How often does your dad hit, push, grab or shove you). The 11 items were averaged and scored so a high score represented high hostility (α = 0.86).

Results

Multiple regression analyses were performed to address the study objectives. In all analyses, maternal depressive symptoms and prior adolescent symptoms were entered first to establish temporal precedence and remove spurious sources of association between paternal and adolescent functioning. All continuous independent variables were centered. Statistical controls, including per capita family income, parental age, and parental education, did not produce significant effects in any equation and, for the sake of brevity, are excluded from the analyses reported here.

Consistent with the finding that depression during early adolescence can place individuals at risk for increased subsequent depressive symptoms (Nolen-Hoeksema, Girgus, & Seligman, 1992), prior depressive symptomatology was a strong predictor of subsequent functioning (β = .457; *p* < .001; see Model 1, Table 1). Maternal symptoms were also significantly associated with subsequent adolescent symptoms (β = .114; *p* < .01), which was consistent with a large body of research documenting psychological problems in offspring of depressed mothers (for review, see Goodman & Gotlib, 2002). Finally, Year 2 adolescent depressive symptoms were predicted by gender (*b* =−.099; *p* < .05), indicating significantly more symptoms in girls. This finding was consistent with the existing literature on gender differences in adolescent internalizing problems (e.g., Allgood-Merten, Lewinsohn, & Hops, 1990).

In Model 2, paternal characteristics and interaction effects were entered, accounting for a significant proportion of the remaining variance (ΔR^2= .030, *p* < .05). Our first hypothesis (H_1) was partially supported. As predicted, female offspring experienced more depressive symptoms than did boys as a function of paternal symptoms (*b*=−.249; *p* < .05). Also consistent with H_1, the effect of paternal symptoms on adolescent symptoms changed dramatically with degree of hostility (β = .159; *p* < .01); paternal depressive symptoms

posed significantly more risk when adolescents perceived higher hostility. Contrary to our prediction, maternal depressive symptoms did not moderate the association between paternal and adolescent functioning (β =−.051). The correlation between maternal and paternal symptoms did not reach statistical significance (r = .073). Our findings suggest that maternal and paternal depressive symptoms may have an additive, rather than interactive, effect on adolescent functioning.

Controlling for all main effects and two-way interactions, the three-way interaction between paternal depressive symptoms, father hostility, and adolescent gender was statistically significant (b = −.278; p < .05). As suggested in Holmbeck (2002), post-hoc probing of this moderational effect was conducted in which simple regression equations were generated, one at each of the four combinations of gender and hostility at one standard deviation above and below the mean (see Figure 1). Significance tests for each simple slope indicated that only the slope for girls experiencing high paternal hostility was significantly different from zero (b= .391; p < .001). Adolescent girls' depressive symptoms tended to be highest when levels of paternal depressive symptoms and father hostility were high (H_2). The independent variables in the full model collectively explained 30% of the variation in Year 2 adolescent depressive symptoms.

Discussion

This study adds to the literature by demonstrating a prospective association between paternal depressive symptoms, adolescent perception of paternal hostility, and adolescent functioning in a large community sample. Consistent with Phares (1997), our analyses indicate a complex connection between paternal depression, father-child relations, and adolescent adjustment. Paternal depressive symptoms were a strong predictor of adolescent outcome, even after controlling for family demographic variables, maternal depressive symptoms, and previous adolescent symptoms. Adolescent gender and perception of paternal hostility moderated intergenerational risk for depression such that females reporting high paternal hostility were particularly vulnerable to the adverse effects of paternal depressive symptoms.

Adolescent Gender and Paternal Hostility

Relatively few studies have examined whether risk for psychopathology in offspring of depressed parents varies as a function of child gender (Goodman & Gotlib, 1999). Of the studies which have included offspring gender, most examined only maternal characteristics. There is modest support that adolescent daughters of depressed mothers are at particular risk for depression (e.g., Fergusson, Horwood, & Lynskey, 1995). Cross-sectional research examining offspring of depressed fathers indicate comparable risk for sons and daughters (Currier et al., 2006; Lieb, Isensee, Hofler, Phister, & Wittchen, 2002). Longitudinal findings from the present study, however, suggest that adolescent gender may play an important role in determining whether paternal depressive symptoms are related to adolescent functioning. Consistent with the proposal that girls' differential vulnerability may derive from socialization experiences that emphasize relationship-focused orientation (Hops, 1996), our data indicate that experiences within the father-adolescent relationship may moderate daughters' risk related to paternal depression. Future investigations should explore the association between paternal characteristics and other psychosocial variables which may contribute to increased risk for depression in girls including rumination (Nolen-Hoeksema, 2000), and the development of gender-related role expectations during early adolescence (Hill & Lynch, 1983).

Paternal psychopathology is likely to influence offspring by altering patterns of parent-adolescent interactions (see Cummings & Davies, 1994). Between age 11 and age 14, adolescents' positive perceptions of parent-child interactions often decline (McGue, Elkins,

Walden, & Iacono, 2005), and some cross-sectional findings suggest that these perceptions may moderate the effects of paternal psychopathology on adolescent outcome (Bosco et al., 2003). Our data were consistent with these findings, indicating that adolescent girls' vulnerability to paternal depression was heightened when paternal hostility was high, or at least when they perceived it to be. Women tend to be more interpersonally oriented than men (Feingold, 1994), which may, in part, explain the significant gender-specific interaction between paternal depressive symptoms and hostility. The greater tendency of girls to emphasize or value relationships may translate into risk for depressed mood in the context of paternal depression and hostility. Results from the current analyses were also consistent with evidence that perceptions of negative relationships with the opposite-gender parent may be more strongly associated with adolescent maladjustment (Osborne & Fincham, 1996). Integrating intrafamily stress exposure and perceptions of family conflict with gender-specific risk for adolescent depression will be an important area for future research.

Limitations and Future Directions

Despite its strengths, there were several limitations to this study that should be considered in future research. First, extending this type of research to more diverse samples, including single-parent as well as urban and minority families, will increase generalizability of findings. Second, these variables were examined with self-report data; future work should replicate these findings with multiple-informant and observational measures, as sources of data may affect relationships between theoretical constructs (Compas, 1987). Finally, a substantial proportion of the variance in the outcome measure remains unexplained by these independent variables. Future research should explore additional genetic, biological, and contextual variables that may precipitate or protect against the development of depression during adolescence. In spite of these limitations, this study adds to our understanding of intergenerational depression and has important applied implications including a number of potential targets for behavior change that may promote resilience in adolescent offspring of depressed fathers. For example, therapeutic interventions aimed at reducing family conflict, particularly between fathers and daughters, may be especially helpful in preventing or alleviating adolescent depression.

Earlier studies of family interactions and intergenerational psychopathology have typically overlooked characteristics of the father (Phares, 1992) and have assessed concurrent relations between paternal and child functioning, thus limiting inferences about temporal order and direction of effect (see review by Kane & Garber, 2004). Results from this study highlight the importance of including fathers in developmental research and contribute to our understanding of the psychosocial mechanisms by which risk for depression is transmitted across generations. We hope these results will lead to future research on fathers' role in the development of adolescent psychopathology, and on how risk may be influenced by intrafamily relationships and adolescent gender. Family-based preventative and treatment interventions for adolescent depression will benefit from a more thorough understanding of the direct and indirect paths through which paternal depression influences adolescent development. It may be particularly important to help depressed fathers recognize their psychological problems and pay special attention to family conflict as a mechanism by which adolescent offspring inherit risk for depression.

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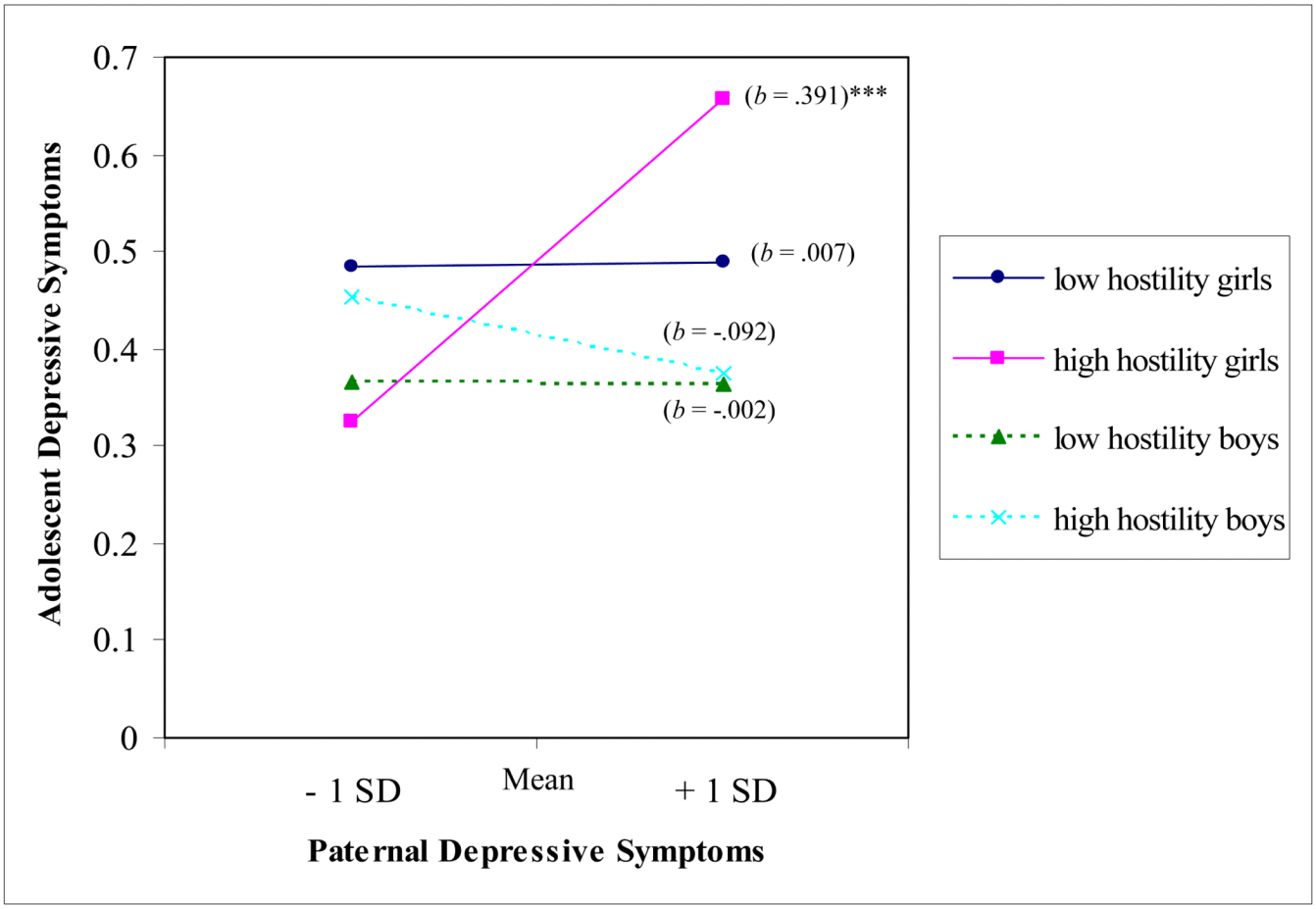

Figure 1.
Adolescent Depressive Symptoms as a Function of Paternal Depressive Symptoms, Paternal Hostility, and Adolescent Gender.
Note. *SD* = standard deviation, *b* = unstandardized regression coefficient.
* $p < .05$, ** $p < .01$, *** $p < .001$

Table 1

Standardized Regression Coefficients Predicting Adolescent Depressive Symptoms from Paternal Depressive Symptoms, Paternal Hostility, and Interaction Effects, Controlling for Prior Adolescent Depressive Symptoms, Maternal Depressive Symptoms, and Gender (n=420)

	Model 1	Model 2
Previous Adolescent Depressive Symptoms	.457***	.447***
	[.364]	[.357]
	(.035)	(.037)
Maternal Depressive Symptoms	.114**	.107*
	[.107]	[.100]
	(.041)	(.041)
Gender (male = 1)	−.099*	−.103*
	[−.094]	[−.097]
	(.040)	(.041)
Paternal Depressive Symptoms		.184**
		[.203]
		(.066)
Paternal Hostility		−.001
		[.000]
		(.037)
Paternal Symptoms by Maternal Symptoms		−.051
		[−.133]
		(.113)
Paternal Symptoms by Gender		−.152*
		[−.249]
		(.096)
Paternal Hostility by Gender		.037
		[.029]
		[.048]
Paternal Symptoms by Hostility		.159**
		[.230]
		(.085)
Paternal Symptoms by Gender by Hostility		−.126*
		[−.278]
		(.128)
Constant	.533	.533
R^2	.261***	.290***
ΔR^2	--	.030*

Note. Unstandardized coefficients are in brackets and standard errors are in parentheses, models controlled for family income and parents' age and education.

* $p < .05$

** $p < .01$

*** $p < .001$