

# Parent Psychopathology, Parenting, and Child Internalizing Problems in Substance-Abusing Families

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A structural model accounting for child internalizing problems in substance-abusing families was tested. Parents receiving substance abuse treatment ( $N = 242$ ) completed forms about children between the ages of 6 and 18 who resided in their home. The effects of parent gender, child gender, and child age were controlled. Negative parenting was examined as a mediator between parent internalizing and externalizing problems and child anxiety and affective problems using path analysis. Negative parenting mediated relations only between parent internalizing problems and child affective problems. High-positive involvement moderated relations between parent externalizing problems and child internalizing problems. Relations between parent externalizing problems and child anxiety and affective problems were significant only among families in which high-positive involvement was present.

*Keywords:* children of substance-abusing parents, parent psychopathology, child internalizing problems

There is wide agreement that children of substance-abusing parents (SAPs) are at increased risk for psychological difficulties relative to children in the general population (Kelley & Fals-Stewart, 2004; Stanger et al., 1999). Research considering both internalizing and externalizing problems in children of SAPs has generally indicated that externalizing problems are more prevalent among these children. Nevertheless, a substantial number of children present either exclusively or concurrently with internalizing disorders and symptomatology. For instance, rates of internalizing problems among children of SAPs reach 21% for affective disorders and 24% for anxiety disorders (Nunes et al., 2000). In contrast, prevalence rates of these diagnoses in community samples are considerably lower, approximating 5% for affective disorders (McCracken, 1992) and 13% for anxiety disorders (U.S. Department of Health and Human Services, 1999). Accordingly, children of SAPs are a high-risk group and are expected to experience more internalizing problems than their same-age peers.

Despite converging findings of an increased risk for emotional difficulties among children of SAPs, present understanding of the way that such problems develop in these children remains unclear. Because children of SAPs are generally heterogeneous with respect to psychological functioning, it is necessary to identify the

particular preexisting factors, mechanisms of risk, and/or environmental contexts that can account for such differences in child outcomes. Toward this end, concurrent parent psychopathology and parenting practices are important factors that may differentiate between poor and positive outcomes among children of SAPs.

Earlier work investigating concurrent internalizing problems among substance-abusing families (e.g., El-Sheik & Flanagan, 2001) has consistently revealed that parent internalizing problems increase the risk for similar problems in children. Although many studies have examined parent internalizing psychopathology as a predictor increasing the risk for internalizing problems among children of SAPs, far fewer studies have considered the influence of parent externalizing psychopathology on these outcomes. The handful of studies in which this question has been investigated, however, have yielded equivocal findings. Moss, Baron, Hardie, and Vanyukov (2001) and Moss, Lynch, Hardie, and Baron (2002), for instance, found that children of fathers with substance dependence and antisocial personality disorder (ASPD) had greater internalizing problems than did children of fathers with substance dependence alone. In contrast, Kuperman, Schlosser, Lidral, and Reich (1999) found that parent ASPD was not a significant predictor of child anxiety problems when the effects of parent alcoholism were controlled. Similarly, Chassin, Pitts, DeLucia, and Todd (1999) found that parent ASPD and parent anxiety disorders failed to independently predict adolescent internalizing problems and depression or anxiety diagnoses, after controlling for their covariation and relations with parent alcoholism. Thus, the impact of parent externalizing problems on child internalizing problems in substance-abusing families warrants additional research attention.

Among other high-risk populations, there is scientific consensus that children of parents with internalizing disorders are at greater risk for internalizing problems than are children of parents without such psychological distress. This finding has been demonstrated in children of depressed parents (Beardslee, Versage, & Gladstone, 1998) as well as in children of parents with anxiety disorders

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(Turner, Beidel, & Costello, 1987). Children of parents with ASPD are at risk for externalizing problems (e.g., Frick et al., 1992); however, the impact of parent ASPD on child internalizing problems has been examined in few studies. Of exception, recent research has indicated that depression among youth is associated with greater rates of parent ASPD (Marmorstein & Iacono, 2004). Thus, research with samples of parents with psychiatric disorders has revealed that there is an increased risk of child internalizing problems among families in which parents exhibit internalizing problems or externalizing problems, though it is important to note that most research has focused on mothers in the former case and fathers in the latter case. In addition, few studies have considered the effect of parent internalizing and externalizing problems on children in tandem.

Beyond parent psychopathology, parenting practices are important mechanisms of risk that may serve to account for the variability in outcomes of children of SAPs. In samples of parents with internalizing disorders, maternal ineffective parenting (poor monitoring and inconsistent discipline), for example, predicts internalizing problems among adolescents (Simons, Whitbeck, Bearman, & Conger, 1994), and parent affective problems predict inconsistent discipline (Stoneman, Brody, & Burke, 1989). Therefore, parenting practices may be a strong candidate for mediating these relations in other high-risk groups. However, no studies have examined negative parenting as a mediator of relations between parent psychopathology and child internalizing problems in substance-abusing families.

It is also possible that positive parental involvement moderates relations between parent psychopathology, negative parenting, and children's affective and/or anxiety symptoms. Although research has found negative parenting (e.g., inconsistent discipline) to be a strong predictor of child behavioral and emotional problems (Patterson & Stouthamer-Loeber, 1984), positive parenting (e.g., positive reinforcement and involvement) is frequently a weak predictor of child outcomes (Barrera, Biglan, Ary, & Li, 2001) and fails to account for treatment-related improvements among clinical populations (Hinshaw et al., 2000). Despite its poor predictive value, positive parenting may be an important moderator of the relations between parent and child problems. For instance, a number of previous studies have found that relations between individual and/or family risk factors and child outcomes differ for families with high- versus low-positive parenting (Laucht, Esser, & Schmidt, 2001; Levendosky, Huth-Bocks, & Semel, 2002; Petit, Bates, & Dodge, 1997; Tully, Arseneault, Caspi, Moffitt, & Morgan, 2004). Among these studies, only one tested the interaction of positive parenting and individual- or family-level risk factors on child internalizing problems (e.g., Laucht et al., 2001), and none have tested the interaction of positive parenting and parent psychopathology. In addition, no studies have examined positive involvement as a moderator of relations among parent psychopathology, negative parenting, and child internalizing problems in substance-abusing families.

Furthermore, a limited number of studies have examined the outcomes of child anxiety and affective problems while controlling for their covariation. To the extent that anxiety and affective problems are highly correlated, they are often combined in analyses. Although it is true that anxiety and affective problems can co-occur, empirical work has shown that they also frequently present in isolation in children and adolescents (Axelson & Bir-

maher, 2001). Therefore, because there is not a one-to-one relation between anxious and affective problems in children, it is important to disaggregate these conditions in analyses in order to identify distinct patterns of transmission.

Perhaps obscuring the relations among parent psychopathology, negative parenting, and child internalizing problems, levels of these problems may vary by parent gender, child gender, and child age. For instance, gender differences in mean levels of symptoms have been found among many samples, with higher problems among female adults relative to male adults (e.g., Derogatis, 1993) and higher internalizing problems among female children relative to male children (e.g., Achenbach & Rescorla, 2001). Research has also shown that older children typically obtain higher scores on items that represent affective problems, whereas younger children tend to obtain higher scores on items that reflect anxiety problems, though these age effects are small in magnitude (Achenbach & Rescorla, 2001). Furthermore, previous work has indicated that parenting practices vary with child age (Frick, Christian, & Wooten, 1999). Given the differences in problem severity by parent and child gender and child age, it is important to control for the effects of these demographic characteristics on the primary variables of interest.

Moreover, the present study is exploratory in nature and addresses the following three aims: (a) to examine the separate contributions of parent internalizing and externalizing problems to negative parenting and child anxiety and affective problems; (b) to consider negative parenting as a potential mechanism through which both parent internalizing and externalizing problems may impact child anxiety and affective problems; and (c) to examine whether positive parental involvement moderates relations among parent psychopathology, negative parenting, and child internalizing problems. In addition, the study addresses all three aims while controlling for the effects of parent gender, child gender, and child age on the primary variables of interest.

## Method

### *Participants*

Participants were recruited from November 1994 through June 2003 from several substance abuse treatment facilities, including the Substance Abuse Treatment Center (treating cocaine and opiate dependence), the Chittenden Center (treating opiate dependence), and the Treatment Research Center (treating marijuana dependence) at the University of Vermont; the Day One program (treating alcohol and drug dependence) at Fletcher Allen Health Care in Burlington; the Substance Abuse Research Center (treating cocaine and opiate dependence) at the University of Texas Health Science Center at Houston; and the Los Angeles Matrix Clinic (treating opiate dependence) at the University of California, Los Angeles. Parents were included in the study only if they fulfilled the following inclusion criteria: (a) 18 years of age or older; (b) receiving treatment for substance dependence; (c) satisfied *Diagnostic and Statistical Manual of Mental Disorders* (3rd edition, revised [*DSM-III-R*] and 4th edition [*DSM-IV*]; American Psychiatric Association, 1987, 1994) criteria for substance dependence; and (d) living with and parenting at least one child between the ages of 2 and 18 years. *DSM-III-R* or *DSM-IV* diagnoses of cocaine, opiate, alcohol, and marijuana dependence were made by trained intake workers under the supervision of doctoral-level psychologists.

To identify substance-dependent patients living with and parenting children between 2 and 18 years of age, we screened 4,801 patients receiving treatment for substance abuse. Of those screened, 3,793 patients (79%)

were not living with and parenting children. Of the ineligible patients, about half had no children ( $n = 1,867$ , 49%), 35% did not live with their children ( $n = 1,328$ ), 10% had children who were less than 2 or older than 18 years of age ( $n = 384$ ), 178 patients (5%) were ineligible for reasons that are unknown, and 0.9% had either already participated ( $n = 20$ ) or did not parent the children in the home ( $n = 16$ ).

Of the 1,008 (21%) eligible patients living with and parenting children ages 2 through 18 years, 275 (27%) dropped out of treatment before they could be asked to participate, 64 (6%) were not asked to participate before they completed treatment, and 162 (16%) refused to participate. Five-hundred seven (50% of eligible patients) participated in the present study. Six participants (0.6%) who provided flawed data (e.g., responded randomly or provided inconsistent responses) were excluded from the study. Because children ages 2 through 5 years were assessed using different age-appropriate measures, they were not included in these analyses ( $n = 198$  families). Additionally, 61 of the remaining 303 (20%) participants were missing the parenting instrument that was used to designate group assignment for tests of moderation. However, because assessment of parenting began after March 1996 for the Vermont-based clinics and after February 1999 for the clinic in Texas, much of the missing parenting data (i.e., 87%) are missing by design, reducing the likelihood that these data are missing for reasons that may influence the results of analyses. Differences between participants in demographic and symptom characteristics were tested with chi-square tests or one-way analysis of variance (ANOVA). There were no significant differences between parents with versus without an Alabama Parenting Questionnaire (APQ; Frick, 1991) in socioeconomic status (SES), gender, and measures of parent psychopathology or child internalizing problems ( $p > .05$ ). Therefore, the 61 families with no parenting data were excluded from further analyses, leaving 242 SAP participants who completed forms about 385 children between the ages of 6 and 18.

The 242 parent participants were 59.1% female and 40.9% male and ranged in age from 20 to 65 years ( $M = 37.9$  years,  $SD = 7.5$  years). All parents provided information on the presence of another caregiver (coparent) in the home. Of the 242 parents, 162 (67%) parents lived with a coparent. Male and female parents were equally likely to be living with a coparent (35% of female parents vs. 31% of male parents),  $\chi^2(1, n = 162) = 0.625, p > .05$ . Of the parents living with a coparent, 136 (84%) gave us permission to contact their coparent, and 76 (55.9%) of the coparents we had permission to contact participated. Parent mean SES was 4.7 ( $SD = 2.0$ , range = 1–9) on the Hollingshead (1975) nine-step Occupational scale, where a score of 4 includes occupations involving skilled manual labor and those such as postal worker, licensed practical nurse, and day-care teacher. Primary drugs of abuse were 36% cocaine, 35% opiates, 23% alcohol, and 6% marijuana. Of the parent participants, 80% lived in Vermont, 13% in Texas, and 7% in California.

The unit of analysis was the parent ( $N = 242$ ) in order to obviate the nesting of observations within families. We ensured independence of observations by randomly selecting one child per family ( $N = 242/385$ ). To randomly select children, each family was assigned a random number between 1 and 100 using the random number generator in SPSS. For families having two children, if their random number was below 50, then the oldest child was selected. A similar strategy was used to randomly select one child from families having three, four, and five children.

The 242 children were 54% boys ( $n = 131$ ) and 46% girls ( $n = 111$ ). They ranged in age from 6 to 18 years ( $M = 11.0$  years,  $SD = 3.7$  years). The children were 77.7% Caucasian, 11.2% African American, 5.4% Latino/Latina, 2.5% Native American, and 3.2% multiracial or "other." Of the children, 78% were the biological or adoptive children of the patient, 10% were stepchildren, and 12% had some other relationship (e.g., child of the patient's boyfriend or girlfriend, grandchild, and the like). In the 12 months prior to their assessment, 22% of the children had been referred for mental health services.

## Procedures

Within the first 30 days of treatment, staff of substance abuse treatment clinics described the study to eligible patients and requested their participation. All consenting patients were given measures to complete; those who had difficulty reading were administered measures orally. Patients were compensated \$20–\$50, depending on their promptness in returning complete forms. Staff of the substance abuse clinics discussed confidentiality with patients and informed them that information about their children would not be released without their express written consent.

## Measures

*Parent symptom scales.* Parents completed measures, including the Symptom Checklist-90 (SCL-90; Derogatis & Melisaratos, 1983) or the Brief Symptom Inventory (BSI; Derogatis, 1993). The 53 items shared in common by the SCL-90 and BSI were used in the present study. Items are measured on a 5-point Likert scale, with responses ranging from 0 (*not at all*) to 4 (*extremely*). In the present study, five BSI scales were used: Anxiety, Phobic Anxiety, Depression, Hostility, and Paranoid Ideation. The Anxiety scale concerns cognitive and somatic aspects of anxiety, including feelings of terror, panic attacks, nervousness, and tension. The Phobic Anxiety scale involves avoidance and escape behavior typical of agoraphobia. The Depression scale includes the affective problems of clinical depression, such as dysphoria and suicidal ideation. The Hostility scale includes thoughts, feelings, or actions that reflect anger and negative affectivity. The Paranoid Ideation scale indicates paranoid behavior, including hostility, suspiciousness, grandiosity, centrality, and content-congruent delusions. The SCL-90 and BSI have shown adequate reliability (Derogatis, 1993; Derogatis & Melisaratos, 1983).

Parents also completed either the Beck Depression Inventory (BDI; Beck & Steer, 1987;  $n = 245$ ) or the Beck Depression Inventory-second edition (BDI-II; Beck, 1996;  $n = 26$ ). The BDI-II includes 21 items for which individuals must select one statement of four that is "most true of [them]" (BDI-II; Beck, 1996). Raw BDI total scale scores were converted to BDI-II scores according to the conversion table provided in the BDI-II manual. The BDI-II has demonstrated good reliability and correlates highly with other measures of depression (Beck, 1996).

*Parenting.* Parents completed the APQ (Frick, 1991). The APQ contains three subscales: Positive Involvement, Negative/Ineffective Discipline, and Deficient Monitoring (Hinshaw et al., 2000; Wells et al., 2000). The Positive Involvement subscale assesses frequency of praise and positive reinforcement of prosocial child behavior such as good performance on tasks, good behavior, compliance with requests, affection, and parental interest and interaction with the child. The Negative/Ineffective Discipline subscale measures inconsistent discipline practices, maintaining parental responsibilities, and corporal punishment. The Deficient Monitoring subscale assesses parental supervision of the child's activities. Items are rated on a 5-point Likert scale, with responses ranging from 1 (*never*) to 5 (*always*). The three factors of the APQ have shown excellent internal consistency among families participating in the multimodal treatment study of children with attention-deficit/hyperactivity disorder (Hinshaw et al., 2000).

In consideration of previous work indicating that low-positive involvement is a risk factor for child functioning (Stormshak, Bierman, McMahon, Lengua, & Conduct Problems Prevention Research Group, 2000), we chose to designate a conservative score to determine entry into the low-positive involvement group. Because a large number of individuals scored just above the mean on Positive Involvement ( $n = 32$ ; 13%), participants scoring below the mean were placed in the low-Positive Involvement group (LPI;  $n = 100$ ), and those scoring at or above the mean were placed in the high-Positive Involvement group (HPI;  $n = 142$ ). To determine that our results were not a function of the great number of individuals who fell just above the mean, we replicated our analyses using a median split to designate the HPI ( $n = 110$ ) and LPI ( $n = 132$ ) groups. Using a median

split served to reverse the group membership of individuals who fell just above the mean. When a median split was used to designate group membership, results remained the same.

*Child symptom scales.* Parents and coparents completed either the Child Behavior Checklist for Ages 4–18 (CBCL/4–18; Achenbach, 1991;  $n = 45$  parents and  $n = 19$  coparents) or the more recent version, the Child Behavior Checklist for Ages 6–18 (CBCL/6–18; Achenbach & Rescorla, 2001;  $n = 197$  parents and  $n = 57$  coparents), both of which obtain ratings of 20 competence items, 118 specific behavioral/emotional items, and 2 open-ended items. The 2001 CBCL can be scored for a number of *DSM*-oriented scales derived from the CBCL syndrome items. The Anxiety Problems scale includes items deemed by expert raters to be very consistent with the *DSM-IV* diagnoses of generalized anxiety disorder, separation anxiety disorder, and specific phobia. Similarly, the Affective Problems scale consists of items consistent with the *DSM-IV* diagnoses of dysthymia and major depressive disorder. All but 1 of the 19 items of the *DSM*-oriented Anxiety and Affective Problems scales (i.e., “enjoys little”) appear on the 1991 CBCL. *DSM*-oriented Affective and Anxiety Problems scales were scored by standardizing scores within each instrument (1991 vs. 2001). For those children for whom only parent ratings were present ( $n = 166$ ), this standardized score was used. For the children for whom coparent ratings were also available ( $n = 76$ ), a mean of parent and coparent standardized scores formed a single score of child problems. The resulting scores were used to create child anxiety and child affective manifest variables. Analyses were also conducted using variables derived only from parent ratings of child problems. Findings were the same whether coparent ratings contributed to our estimation of child problems or were not included in the final score. The response items for the problem scales range from 0 (*never or almost never true*) to 2 (*always or almost always true*). All CBCL *DSM*-oriented scales have shown excellent reliability and validity (Achenbach & Rescorla, 2001).

### Missing Data

Of the 242 parents, 11 (5%) parents were missing a BDI-II score, and 35 (14%) were missing one or more scales of interest on the BSI/SCL-90. Therefore, 46 (19%) participants were missing at least one of the parent symptom measures. Reasons for missing parent data include (a) the form was not administered to the patient or (b) the patient chose not to complete the form when it was administered. Analyses were first conducted using all available data ( $N = 242$ ) and were then replicated on a subsample after listwise deletion ( $n = 196$ ). Because results were the same in each case, they are presented for the entire sample.

Although there were no missing data for the two CBCL *DSM*-oriented scales obtained from parents, 166 (68.5%) children were missing a CBCL from a second caretaker in the home. To establish that there were no systematic differences between the families in which coparents participated ( $n = 76$ ) and the remaining families in which coparents did not participate ( $n = 166$ ), we performed a series of one-way ANOVAs. Families were compared on the following indices: SES; parent gender; and parent ratings of psychopathology, parenting, and child problems. No comparisons were significant at  $p < .05$ , suggesting that families with coparent data were representative of all families who participated.

### Data Analysis

We created two composite manifest variables by standardizing then summing the scores obtained on measures of parent symptomatology. The parent internalizing variable consisted of BSI Anxiety, BSI Phobic Anxiety, BSI Depression, and BDI scores, and the parent externalizing variable consisted of BSI Hostility and BSI Paranoid Ideation scores. The latter scale was included in our parent externalizing variable because of its relations with externalizing problems such as aggressive behavior (Berman, Fallon, & Coccaro, 1998; Dodge, Murphy, & Buchsbaum, 1984). A

negative parenting manifest variable was created by standardizing then summing the Negative/Ineffective Discipline and Deficient Monitoring factor scores.

We used path analysis to explore whether (a) parent psychopathology and negative parenting predict child internalizing problems after controlling for the effects of parent gender, child gender, and child age on all variables in the model; (b) negative parenting mediates relations between parent psychopathology and child internalizing problems; and (c) positive involvement moderates relations among parent psychopathology, negative parenting, and child internalizing problems. Our rationale for using this analytic approach was fourfold. First, this approach controlled for the high correlations observed among the predictors (i.e., parent internalizing and externalizing problems) and the high correlations observed among the outcomes (i.e., child anxiety and affective problems). Second, path analysis permitted us to concomitantly control for the effects of parent gender, child gender, and child age on parent psychopathology, negative parenting, and child internalizing problems. Third, multiple-group comparison, using structural equation modeling, enabled testing the moderating effects of positive involvement while controlling for the covariates and correlations among predictors and the correlations among outcomes. In particular, multiple-group comparison made it possible to examine whether positive involvement moderates the path analytic model rather than detecting mean-level differences in parent psychopathology, negative parenting, and child internalizing problems as a function of high- versus low-positive involvement. Fourth, path analysis greatly reduced the experiment-wise error by testing several of our research questions simultaneously rather than individually.

Models were estimated using AMOS 4.0 (Arbuckle & Wothke, 1999) and were conducted in the context of a multiple-group comparison (Jöreskog & Sörbom, 1993), providing a single estimate of model fit simultaneously across the HPI and LPI groups. In order to control for the effects of parent gender, child gender, and child age on the relations between parent psychopathology, negative parenting, and child internalizing problems, we included relations between each of these three covariates and all five outcome variables in all analyses. In essence, parent gender, child gender, and child age were included as exogenous variables in each of the models and had separate coefficient paths to each of the endogenous variables.

The analyses proceeded in a number of steps. We first tested a model in which the covariances between parent internalizing and parent externalizing and child anxiety and child affective were constrained to be identical across the HPI and LPI groups. Because parent gender, child gender, and child age are theoretically unrelated, the three covariances among these variables were fixed to zero for both the HPI and LPI groups. The model included direct paths between each of the two correlated parent internalizing and parent externalizing predictor variables and the two correlated child anxiety and child affective outcome variables. The model also included indirect paths between the two predictor variables and negative parenting, and between negative parenting and the two outcome variables. Finally, the model included paths between each of the three covariates (i.e., parent gender, child gender, and child age) and the five primary variables.

In order to examine negative parenting as a mediator, we tested a second model that omitted all paths among the five primary variables that were nonsignificant for both groups in the first model. When nonsignificant paths are the only paths omitted from a given model, the fit of the reduced model will be comparable to the fit of the full model (Kline, 1998). If a direct path between a given predictor and outcome variable can be omitted without worsening the fit of the full model, then mediation may be inferred (Holmbeck, 1997; Kline, 1998). In addition, the presence of significant indirect pathways between the predictor variable(s) and the hypothesized mediator and between the hypothesized mediator and the outcome variable(s) in the reduced model support the presence of mediation.

We used two nested model comparisons to detect moderation effects (Arbuckle & Wothke, 1999). The first comparison was used to determine

whether the effects of parent gender, child gender, and child age were similar for groups high versus low on positive involvement. The second comparison tested whether positive involvement moderated relations among parent psychopathology, negative parenting, and child internalizing problems.

## Results

The zero-order correlation matrix for all variables included in the path analyses is presented by group in Table 1. As can be seen in Table 1, in both the HPI and LPI groups, parent internalizing was significantly correlated with negative parenting and negative parenting was significantly correlated with child affective. In addition, all other correlations were significant in the HPI group. Mean scores and standard deviations for each variable included in the analyses are also presented by group in Table 2. As is shown in Table 2, children in the LPI group were significantly older than were children in the HPI group,  $t(240) = 4.24, p < .001$ . In addition, parents in the LPI group reported significantly higher levels of negative parenting than did parents in the HPI group,  $t(240) = 4.60, p < .001$ .

### Modeling Relations Between Parent Psychopathology, Negative Parenting, and Child Internalizing

The full model fit the data very well,  $\chi^2(8) = 12.53, p = .129$ , Tucker-Lewis Index (TLI) = .917, root-mean-square error of approximation (RMSEA) = .049, comparative fit index (CFI) = .991, parsimony comparative fit index (PCFI) = .110. Parameter estimates for HPI and LPI groups are shown in Figure 1. Table 3 displays the full model parameter estimates for the relations between each of the three covariates and all five outcome variables. Among all covariates considered, the most robust effects were revealed for parent gender and child age. In particular, there were significant effects of parent gender on parent internalizing, indicating greater internalizing problems for female parents relative to male parents. There were also significant effects of child age on

negative parenting, representing greater negative parenting with older rather than with younger children.

### Negative Parenting as a Mediator

In the reduced model, the paths between parent externalizing and negative parenting, parent internalizing and child affective, and negative parenting and child anxiety that were nonsignificant in both positive involvement groups were omitted. This model provided an adequate fit to the data,  $\chi^2(14) = 23.69, p = .050$ , TLI = .899, RMSEA = .054, CFI = .980, PCFI = .191. According to this model, parent externalizing problems were directly related to anxiety and affective problems in children of SAPs only in the HPI group. In contrast, parent internalizing problems were related to increased negative parenting, which, in turn, was related to increased child affective problems in both the HPI and LPI groups. This pattern of findings suggests that negative parenting mediates relations between parent internalizing problems and child affective problems but not child anxiety problems. Furthermore, the findings indicate that negative parenting does not mediate relations between parent externalizing problems and child internalizing problems in both the HPI and LPI groups.

### Positive Involvement as a Moderator

In the covariate constrained model, the 15 paths between the three covariates and five endogenous variables were constrained to be equal across the HPI and LPI groups to ensure that the effects of these covariates were invariant across groups. The covariate constrained model fit the data very well,  $\chi^2(29) = 38.67, p = .108$ , TLI = .951, RMSEA = .037, CFI = .980, PCFI = .395, and was not significantly different from the reduced model,  $\chi^2_{diff}(15) = 14.98, p > .05$ , demonstrating that the effects of parent gender, child gender, and child age on parent psychopathology, negative parenting, and child internalizing problems were similar for parents with high- and low-positive involvement.

Table 1  
Zero-Order Correlation Matrix of Variables in Path Analyses

Variable	1	2	3	4	5	6	7	8
1. Parent gender	—	.11/.05 142/100	.23*/.18 142/100	.17/.35* 118/75	.17/.14 123/84	.25*/.11 142/100	.11/-.03 142/100	.13/.15 142/100
2. Child gender		—	-.04/.05 142/100	.08/.04 118/75	.15/.07 123/84	-.05/-.00 142/100	.10/-.16 142/100	.10/-.07 142/100
3. Child age			—	-.03/.01 118/75	-.14/-.03 123/84	.30**/.38** 142/100	.01/.02 142/100	.15/.20* 142/100
4. Parent internalizing				—	.81**/.85** 117/75	.27**/.27* 118/75	.44**/-.01 118/75	.34**/.12 118/75
5. Parent externalizing					—	.29**/.18 123/84	.55**/.05 123/84	.48**/.08 123/84
6. Negative parenting						—	.29**/.08 142/100	.39**/.28* 142/100
7. Child Anxiety							—	.73**/.66** 142/100
8. Child affective								—

Note. Bivariate correlations of the high-positive involvement group appear on the left, bivariate correlations of the low-positive involvement group appear on the right. Pairwise subsample sizes for each group are displayed below correlations.

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

Table 2  
Means and Standard Deviations Used in Path Analyses

Variable	HPI group				LPI group			
	<i>n</i>	%	<i>M</i>	<i>SD</i>	<i>n</i>	%	<i>M</i>	<i>SD</i>
Parent gender	142				100			
Male	51	35.9			48	48		
Female	91	64.1			52	52		
Child gender	142				100			
Male	73	51.4			58	58		
Female	69	48.6			42	42		
Child age	142		10.21	3.57	100		12.18	3.55**
Parent internalizing	118		0.45	3.50	75		-0.14	3.35
Parent externalizing	123		0.02	1.84	84		0.04	1.89
Negative parenting	142		-0.39	1.48	100		0.55	1.67**
Child anxiety	142		0.02	1.02	100		-0.05	0.84
Child affective	142		-0.07	0.91	100		0.03	0.96

Note. Gender was coded numerically (1 = male; 2 = female). HPI = high-positive involvement; LPI = low-positive involvement.  
\*\*  $p < .001$ .

In the path constrained model, the remaining five paths in the model were constrained to be equal across the HPI and LPI groups. The path constrained model provided an adequate fit to the data,  $\chi^2(34) = 63.63, p = .002, TLI = .873, RMSEA = .06, CFI = .940, PCFI = .444$ , but fit significantly worse than did the covariate constrained model,  $\chi^2_{diff}(5) = 24.96, p < .001$ , demonstrating that positive involvement moderates relations among parent psychopathology, negative parenting, and child internalizing problems. In order to determine what relations were moderated by positive involvement, a final nested model (final model) was tested in which only those paths that displayed similar effects (i.e., both paths were significant or nonsignificant in both groups) were constrained to be equal, whereas the paths that exhibited different effects (i.e., path significant in one group but nonsignificant in the other group) remained unconstrained. Moreover, a nonsignificant

chi-square difference test between the final model and the covariate constrained model provided support for positive involvement as a moderator of the unconstrained paths. Accordingly, in the final model, the relations between parent internalizing and child anxiety, parent internalizing and negative parenting, and negative parenting and child affective were constrained across HPI and LPI groups; relations between parent externalizing and child anxiety and child affective were left unconstrained. The final model fit the data very well,  $\chi^2(32) = 42.28, p = .106, TLI = .953, RMSEA = .037, CFI = .979, PCFI = .435$ , and was not significantly different from the covariate constrained model,  $\chi^2_{diff}(3) = 3.61, p > .05$ .

For this reason, the final model was retained as the best fitting and most parsimonious model. As Figure 2 shows, there was a significant relation between parent internalizing and negative parenting in both the HPI group and the LPI group. Likewise, there

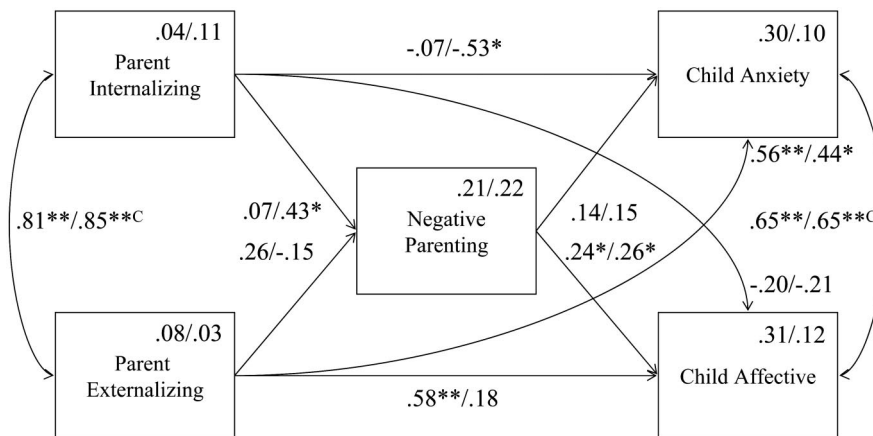


Figure 1. Standardized parameter estimates are displayed as high-positive involvement (HPI)/low-positive involvement (LPI). Squared multiple correlations are displayed within manifest variables HPI/LPI. Covariate variables and pathways and residual error terms are not displayed. Superscript C denotes covariances constrained to be equal across groups. Full model  $N = 242, \chi^2(8) = 12.53, p = .129$ , Tucker-Lewis index = .917, root-mean-square error of approximation = .049, comparative fit index = .991, parsimony comparative fit index = .110. \*  $p < .05$ . \*\*  $p < .001$ .

Table 3  
Standardized Regression Coefficients for Relations Between Covariates, Parent Psychopathology, Negative Parenting, and Child Internalizing Problems

Variable	Parent gender		Child gender		Child age	
	HPI	LPI	HPI	LPI	HPI	LPI
Parent internalizing	.19*	.32*	.04	.04	-.06	-.10
Parent externalizing	.21*	.13	.08	.07	-.18*	-.06
Negative parenting	.14	-.05	-.08	-.03	.31**	.40**
Child anxiety	-.03	.08	.06	-.16	.05	-.05
Child affective	-.04	.16	.07	-.08	.16*	.09

Note. Gender was coded numerically (1 = male; 2 = female). HPI = high-positive involvement; LPI = low-positive involvement.  
\*  $p < .05$ . \*\*  $p < .001$ .

was a significant relation between negative parenting and child affective in both groups. Furthermore, there were significant relations between parent externalizing and child anxiety and child affective among those families in which high-positive involvement was present. However, these same relations were nonsignificant in the LPI group. The direct path between parent internalizing and child anxiety was nonsignificant in both groups, suggesting that parent internalizing problems exert no direct effects on child anxiety problems, after controlling for the relations among the covariates and the five primary variables. Overall, among the HPI group, the model accounted for 28% and 26% of the variance in children's anxiety and affective problems, respectively. In contrast, the model accounted for less than 1% of the variance in children's anxiety problems and only 7% of the variance in children's affective problems among those families in which low-positive involvement was present.

## Discussion

The present study sought to extend previous work by identifying several environmental factors that serve to increase the risk for internalizing problems in children of SAPs. In particular, the study examined (a) the separate contributions of parent internalizing and externalizing problems to negative parenting and child anxiety and affective problems; (b) whether negative parenting mediated relations between parent psychopathology and child internalizing problems; and (c) whether these relations were similar for families that differed in levels of positive parental involvement. We also examined each of these questions while controlling for the effects of parent gender, child gender, and child age on the primary variables of interest.

Results indicated that there were main effects for parent gender on parent internalizing problems. In particular, female SAPs reported higher levels of internalizing problems than did male SAPs. These findings are comparable to results from community samples that have shown greater depressive symptoms among female adults relative to male adults (Derogatis, 1993). In addition, we found main effects for child age on negative parenting, indicating increases in negative parenting with child age. Similar to our findings, other investigators have also found that parental monitoring and supervision decrease with child age, contributing to greater negative parenting with older children relative to younger children (Frick et al., 1999).

Model testing indicated that negative parenting mediated relations between parent internalizing and child affective problems but not between parent internalizing and child anxiety problems. These findings are in accord with previous research of high-risk groups that revealed negative parenting as mediating relations between parent internalizing disorders and child affective problems (Colder, Lochman, & Wells, 1997). These results also approximate earlier work in which parenting practices were found to fail to

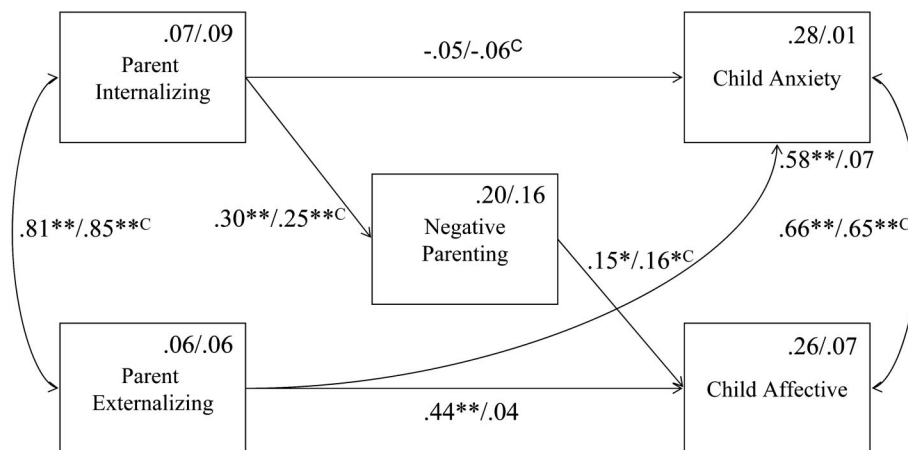


Figure 2. Standardized parameter estimates are displayed as high-positive involvement (HPI)/low-positive involvement (LPI). Squared multiple correlations are displayed within manifest variables HPI/LPI. Covariate variables and pathways and residual error terms are not displayed. Primary paths that were nonsignificant in both groups were omitted prior to estimating the final model. Superscript C denotes covariances and paths constrained to be equal across groups. Final model  $N = 242$ .  $\chi^2(32) = 42.28$ ,  $p = .106$ , Tucker-Lewis index = .953, root-mean-square error of approximation = .037, comparative fit index = .979, parsimony comparative fit index = .435. \* $p < .05$ . \*\* $p < .001$ .

account for relations between parent and child anxiety disorders (e.g., McClure, Brennan, Hammen, & Le Brocque, 2001). However, the present study is the first to consider negative parenting as a mediator of both anxiety and affective problems in substance-abusing families. It is also the first to test these relations, while controlling for the effects of parent gender, child gender, and child age on the variables of interest as well as the high correlations observed between parent internalizing and externalizing problems and between child anxiety and affective problems. Because parent internalizing problems and negative parenting accounted for only a moderate amount of the variance in child internalizing problems, it will be important to identify other factors that may account for child internalizing problems (e.g., family functioning) in future research with substance-abusing families.

Although negative parenting mediated relations between parent internalizing and child affective problems, it did not mediate relations between parent externalizing and either child outcome. Instead, parent externalizing problems were found to exert direct effects on child internalizing problems. These findings are consistent with some work in which the effect of parent externalizing psychopathology on child internalizing problems in substance-abusing families was studied (e.g., Moss et al., 2002), but counter other research examining this question (Chassin et al., 1999; Kuperman et al., 1999). Such discrepant findings may be a result of the differing characteristics of the populations under study. In particular, it is interesting to note that studies in which parents abuse illicit substances have shown evidence for a relation between parent externalizing and child internalizing problems, whereas studies involving only alcohol-abusing parents have not. Although children of parents who abuse any drug, be it alcohol or other, are more likely to develop psychosocial difficulties, recent work indicates that these populations may differ in important ways. For instance, literature suggests that children of drug-abusing parents are at greater risk for clinically significant behavior disorders in general (Cooke, Kelley, Fals-Stewart, & Golden, 2004) and affective and anxiety disorders in particular (Kelley & Fals-Stewart, 2004) relative to children of alcohol-abusing parents. Therefore, the higher prevalence of child internalizing problems among drug-abusing families may enhance the ability to detect the presence of predictive relations when they exist. Given that our sample consisted primarily of drug-abusing versus alcohol-abusing parents (81% vs. 19%), it is likely our findings are more representative of a drug-abusing population. Although the small number of alcohol-abusing parents in our sample prohibited testing the impact of the type of substance dependence on these relations, future work involving both drug-abusing and alcohol-abusing parents will be important in understanding additional differences between these groups.

Results also indicated that the relations between parent internalizing problems, negative parenting, and child affective problems were invariant across HPI and LPI groups. Regardless of the degree of positive parental involvement, parent internalizing problems were related to increased negative parenting, which, in turn, were related to increased child affective problems, though these relations were modest. However, positive parental involvement did moderate relations between parent externalizing problems and child internalizing problems. These relations were significant only in the context of high-positive parental involvement. Moreover, high-positive involvement may operate as a protective factor when

parents display low levels of externalizing problems, reducing the risk for child internalizing problems. As parent externalizing problems increase, however, the protective effects of positive involvement decline and the risk of parent externalizing problems supersede the buffering effects of positive involvement. Among families with low-positive involvement, there appears to be no relation between parent externalizing and child internalizing problems. These results are illustrative of a vulnerability model with possible floor effects that has been described by Masten and colleagues (Masten et al., 1988).

Unfortunately, our findings are not directly comparable to previous studies in which regression approaches were used to examine positive parenting as a moderator. Rather than examining mean-level differences in variables for families with high- versus low-positive involvement, we tested how relations among parent psychopathology, negative parenting, and child internalizing problems differ for families with high- versus low-positive involvement using multiple-group comparison. Future studies involving applications of this approach to other samples are needed to provide additional support for our findings.

Several limitations warrant comment. Although including coparent reports in our estimation of child problems served to reduce the problem of shared method variance, coparent reports were not available for all children. The pattern of results found in this study may vary across other informants (e.g., teacher reports or self-reports), but these ratings were not available for a large enough percentage of the sample to include in our estimation of child problems. In addition, because ratings of parent problems and parenting were not supplemented with data from other informants, or with direct observations of parenting, these variables remain vulnerable to self-report biases. In future research, it will be important to supplement self-report measures with observational measures to elucidate these findings and obtain a more objective assessment of parenting practices and child behavior.

Over and above these limitations, our sample size proscribed a number of analytic procedures. First, it was not possible to use latent constructs in the models we constructed. The use of manifest variables served to conserve power by reducing the number of parameters requiring estimation. In addition, beyond positive involvement, other potential moderators (e.g., type of substance use, severity of substance use, single- vs. two-parent families) may yield important differences in the magnitude or direction of estimates in the models we tested. However, given the size of our sample, it was not feasible to include such factors as additional predictors, nor was it practical to create additional groups on the basis of these characteristics.

It is important to note that we focused on psychosocial mechanisms of risk, and, consequently, we did not examine the contribution of genetics. Furthermore, the concurrent nature of these data is not ideal for exploring mediational processes and weakens our understanding of the direction of effects. Support for the model tested in the present study does not evidence direction of causality, nor does it preclude the possibility of other mechanisms at work. In future work, prospective designs will be used to better understand the functioning of these factors over time, incorporating other risk factors.

Also worthy of mention is that the findings of this study may be unique to SAPs who seek treatment and may not be generalizable beyond this group. For instance, most individuals with substance

abuse or dependence problems do not seek treatment (Regier, Shapiro, Kessler, & Taube, 1984). These findings may also pertain only to SAPs living with their children and not necessarily to the large percentage of SAPs not living with their children.

These limitations notwithstanding, the results of the present study have important implications for future clinical and empirical work. To the extent that preventive interventions should be well suited to the population they intend to serve, it is necessary to delineate the factors that present risks to specific populations, such as substance-abusing families. In addition, aspects of parenting are amenable to modification and may provide another element in the design of effective preventive interventions for children of SAPs. Findings specifically suggest that parent training may be indicated among SAPs who also present with internalizing problems. In addition, when SAPs also show high-externalizing problems, it may be of greater benefit to children to reduce parent externalizing problems before attempting to strengthen parent-child relations.

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