

Children of African-American Mothers Who Use Crack Cocaine: Parenting Influences on Youth Substance Use

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Objective To examine relationships between parenting behaviors, parent–child relationship, and moderating effects of age on youth substance use among a community sample of African-American mothers who use crack cocaine and their children (12–17 years). **Methods** Maternal–child dyads ($n = 208$) were recruited through street outreach and snowball sampling and completed interviews about substance use and parenting. **Results** Regression analyses found significant main effects of youth age, family conflict, warmth, and disapproval of youth substance use on children’s substance use. Age \times Parenting interactions were significant for conflict and disapproval. Higher family conflict increased older youths’ risk, while higher perceived maternal disapproval protected against substance use for older youth. **Conclusions** Family influences may offer risk and protective effects for adolescent children of maternal drug users. Outreach and family-focused interventions that address family conflict and communication of disapproval of substance use may help reduce intergenerational risk transmission. However, longitudinal research with comprehensive parenting assessments is needed.

Key words African-American youth; children of substance users; maternal drug users.

Children living with their substance-abusing parents constitute a group at particularly high risk of becoming substance abusers themselves (Biederman, Faraone, Monuteaux, & Feighner, 2000). These families often live in stressful environments, which can affect parenting and family contexts and pose a threat to their children. Studies show that family factors can deflect the path toward drug use in the long term (Johnson & Leff, 1999); however, research is limited in its elucidation of parenting processes that may protect children of drug users.

African-American Mothers Who Use Crack Cocaine

Crack cocaine use, which has been found to be most prevalent among low-income, inner-city African-American (Havassy, Wasserman, & Hall, 1993), engenders a particularly chaotic lifestyle. African-American women who actively use crack cocaine frequently engage in a variety of high-risk behaviors and experience social contexts that not only increase their vulnerability to

HIV (Sterk, 1999; Wechsberg, Lam, Zule, Bobashev, 2004), but also affect parenting and whether mothers retain or lose custody of their children (Lam, Wechsberg, & Zule, 2004). Maternal substance use is further associated with a host of psychosocial risks, including single parenting, usually by mothers, poverty, family dysfunction, violence (e.g., Amaro, Fried, Cabral, & Zuckerman, 1990), and psychological symptoms such as depression and anxiety (Kelleher, Chaffin, Hollenberg, & Fischer, 1994). Among parental drug users in treatment, parenting influences on child behavior appear significantly stronger for mothers than fathers, with negative parenting practices increasing youth risks (Stanger, Dumenci, Kamon, & Burstein, 2004). Social contexts of maternal drug users can negatively affect parenting practices (Hien & Honeyman, 2000; Kettinger, Nair, & Schuler, 2000) and parent–child attachments (Hans, Bernstein & Henson, 1999) that in turn affect children’s functioning.

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When socioeconomic factors are accounted for, African-American families, on average, fare better than other racial/ethnic groups in low-income environments (Peterson, Ewigman, & Vandiver, 1994) in part due to strong family support networks (Bumpass & Lu, 2000). However, the positive benefits of such family relationships may be tested when a mother uses drugs. Risk behaviors among African-American youth, relative to other ethnic groups, are highly sensitive to stressors such as poverty, racism, community violence, and exposure to drug use (Turner & Lloyd, 2003), adding urgency to understand risk and protective mechanisms for African-American children of maternal drug users.

Resiliency and Protective Effects of Parenting

For reasons yet to be fully understood, many individuals who are exposed to adversity, such as maternal drug use, exhibit few behavioral maladjustments and greater social competencies (Luthar, Cicchetti, & Becker, 2000). They are considered to be resilient, which is believed to occur when individual assets or protective factors promote positive development directly or by modifying or ameliorating the effects of adversity (Masten, 2001). While individual neurocognitive indicators of resilience have gained attention in recent research (Sinha, 2001), other protective factors, such as parenting and relationships, remain critical to prevention.

Parenting Processes: Social Learning and Attachment Theories

Theoretical and empirical literature has suggested mechanisms through which parenting may buffer at-risk children as primary sources of socialization (Bandura, 1986) and attachment objects (Sroufe, Carlson, Levy, & Egeland, 1999; Suchman, McMahon, Slade, & Luthar, 2005) that are critical to development. Social learning perspectives emphasize parenting practices that shape children's behavior by setting limits and expectations, supervising, and monitoring youth behaviors. The parent-child attachment relationship, which generally includes parental warmth, responsiveness, and sensitivity to a child's needs, is considered crucial to a youth's formation of relationships throughout development. Social development theory (Catalano & Hawkins, 1996) integrates these approaches and the importance of healthy, attached relationships with a parent to effectively guide a child's development of beliefs and behaviors.

Empirical support of the social development model has been established for both social learning (e.g., parenting control behaviors), and attachment-related mechanisms (e.g., warmth, closeness, conflict) through

which parenting operates. Protective effects of parental monitoring and supervision on children's substance use have been found among high-risk samples of low-income and among ethnic minorities (DiClemente et al., 2001; Dishion & McMahon 1998). Parental norms and disapproval of antisocial behaviors have similarly been found to buffer against children's risk (Nash, McQueen, & Bray, 2005). Positive family relations reflecting caregiver attachments also buffer against conduct problems and substance abuse among high-risk youth (Florsheim, Tolan, & Gorman-Smith, 1996).

Though close parent-child relationships and parent control and monitoring have been found to protect youth against substance use generally (DiClemente et al., 2001; Florsheim et al., 1996), some evidence suggests that these mechanisms may operate differently with a parent who abuses substances (Fleming, Brewer, Gainey, Haggerty, & Catalano, 1997; Li, Pentz, & Chou, 2002). Stronger parent-adolescent relationships have been found to protect against youth substance use for children of nonusers. However, among children of substance users, such parent-child relationships have been found to be unrelated (Foster et al., 2006) or positively related to dichotomous measures of maternal and youth substance use (Fleming et al., 1997; Foshee & Bauman, 1992). An early study with a sample of substance-using parents found a nonsignificant but inverse (protective) trend between parent-child closeness and youth drug use in which buffering effects of attachment were strongest among high-level parental users and weakest for low-level users (Dembo, Grandon, La Voie, Schmeidler, & Burgos, 1986). Although positive parent-child relationships appear to protect against youth substance use among nonaddicted mothers, evidence is mixed when parents have a substance use problem. Among parental smokers, these findings have been considered within social learning theory, which hypothesizes that parental modeling is a primary mechanism through which behaviors are transmitted to children, especially in the presence of strong parent-child relationships (Foster et al., 2006). However, parents who are illicit drug users are more likely to attempt to conceal such behaviors from children, limiting role model explanations of transmission. Other parenting mechanisms may be influencing children's substance use, such as attitudes about substance use that a parent communicates to children (Bricker, Leroux, Robyn Anderson, Rajan, & Peterson, 2005).

It is not clear from these studies, however, how other parenting behaviors beyond parent-child relationship quality may be contributing to youth risk behaviors.

Stanger and colleagues (2004) explored this question, examining both parenting behaviors (e.g., inconsistent discipline, poor monitoring) and affective qualities of parenting (e.g., affection, praise) among a sample of children of drug-using parents in treatment. These researchers found that monitoring and inconsistent discipline predicted externalizing behaviors, while positive, affective parenting qualities were nonsignificant. Such distinct effects of these parenting dimensions have been found in previous research examining parent control behaviors and parent–child relationship variables simultaneously (Foster et al., 2006; Griffin, Botvin, Scheier, Diaz, & Miller, 2000).

Studies with children of drug users highlight the considerable variation in parenting (Goodman, Hans, & Cox, 1999; Hans et al., 1999), which also changes with child age (Stanger et al., 2004). Behavioral outcomes for children of drug-abusing mothers similarly are varied and contingent upon developmental stage. Biederman et al. (2000) found that 53% of children who were exposed to parental substance use during adolescence became substance users themselves, compared with 15% of those who were not exposed during adolescence. More recently, Kelley and Fals-Stewart demonstrated that the association between parents' functioning and children's adjustment was stronger for preadolescents than their adolescent siblings in drug-abusing families (Kelley & Fals-Stewart, in press). These age effects suggest that parenting influences child outcomes differently depending on developmental stage.

Purpose and Significance of This Study

The purpose of this study is to examine relationships between parenting behaviors (control and supervision; maternal disapproval of substance use), parent–child relationship quality (closeness; warmth; conflict), and youth substance use, and to explore how child age moderates these relationships. It is among the first to present data from a community sample of African-American mothers who use crack cocaine and their adolescent children. Because maternal psychopathology has been found to moderate effects of parenting on children's substance use among maternal drug users (Luthar, Cushing, Merikangas, & Rounsaville, 1998), analyses controlled for mothers' psychological distress and current substance use. Drawing upon empirical evidence with samples of children of drug users, it is hypothesized that both parent behaviors and parent–child relationship factors would show unique main effects on youth substance use. Specifically, it is expected that

relatively stronger effects will be observed for poor parental monitoring and low disapproval with youth substance use than for maternal–child relationship variables. It is predicted that these effects will be qualified by interactions between parenting variables and child age, though the inconsistent evidence (Stanger et al., 2004; Kelley & Fals-Stewart, in press) limits more specific hypotheses about age moderation effects.

Methods

Recruitment

Maternal participants for this cross-sectional study were recruited through street outreach from two counties in North Carolina. Indigenous outreach workers targeted inner-city neighborhood segments to ensure that the sample comprised multiple communities using a pre-specified sampling plan and chain-referral procedures. Outreach workers recruited participants from known drug-using “hot spots” in the community (e.g., crack houses and corner stores) and venues where maternal drug users were known to live and frequent (e.g., public housing developments). A map of the catchment area (i.e., Durham and Wake Counties) was used to identify targeted neighborhood segments. This recruitment strategy followed standardized street-outreach techniques that have been used in numerous community-based studies of hard-to-reach drug users (e.g., Cunningham-Williams et al., 1999). Peer advocates, who were former study participants or community members, were also trained to refer prospective participants to field staff for screening. After conducting a brief field screener, eligible women were referred to the community-based field sites for interviews. Field staff provided transportation as needed.

Participant Eligibility Criteria

To be eligible, maternal participants had to (a) be African-American; (b) report using crack for at least 13 days in the past 6 months; (c) report that they have at least one child aged 12–17 who was currently living in the same household; (d) have legal guardianship of their child; (e) provide written consent for their adolescent child to participate in the study; (f) provide written consent for themselves to participate in the study; and (g) have *not* been enrolled in substance abuse treatment within the past 30 days. The maternal drug use eligibility criteria was recommended in formative focus groups by target mothers as a frequency that effectively identified parents who are active crack users not receiving treatment,

but whose use level nonetheless affects caretaking. Adolescents aged 12–17 who were children of participating mothers were eligible and provided written assent to be interviewed. If mothers had more than one eligible child, the one with the most recent birthday was selected.

Data Collection Procedures

Mothers and youth participated in separate, face-to-face structured interviews using computer-assisted personal interviewing. Interviews lasted approximately 1–1.5 hr and mothers and adolescents were compensated for their time with \$25 and \$15 gift cards, respectively. All study procedures were approved by both the CDC and RTI Institutional Review Boards; a Federal Certificate of Confidentiality was also obtained.

Sample Characteristics

We recruited 211 mothers from Durham and Wake Counties in central North Carolina. Two adolescent children did not complete interviews, and one family was excluded because it was determined that the adolescent child did not live with the mother, thus making our final sample 208 maternal–child dyads. Average youth and maternal ages were 14 and 36 years, respectively. Table I presents sample characteristics.

Measures

Outcome

Youth Substance Use. The outcome variable was youth report of current use of tobacco, alcohol, marijuana, or other illicit drugs in the past 30 days. Adolescents were first asked if they had ever used any of the six substances (cigarettes/alcohol/marijuana/crack cocaine/other illicit drugs/injection drugs). Those who answered “yes” were asked a follow up question: “*What is your best estimate of the number of days you used . . . during the past 30 days?*” for each of the substances listed above. Youth were shown a calendar of the past 30 days to facilitate recall. A single variable reflecting days of any substance use in the past month was calculated as the number of days the adolescent used the most frequently used substance. This continuous variable outcome offered greater variance than dichotomous measures used in previous research, and as cross-sectional data, current use increased the relevancy to other current self-report variables used in the present analysis.

Covariates

Maternal Substance Use. Past month frequency of maternal substance use was assessed from established items on the Revised Risk Behavior Assessment (RRBA), used in

Table I. Demographic Characteristics and Drug Use of Sample Mothers and Children ($n = 208$)

Mothers	
Mean age in years (<i>SD</i>)	36.8 (5.7)
Mean number of children (<i>SD</i>)	2.3 (1.3)
Married or living with partner (%)	15.9
Currently employed full- or part-time (%)	57.2
GED, High school graduate, or higher (%)	62
Currently homeless (%)	12.2
Medicaid/Medicare/Other health insurance (%)	59.2
Ever had open case with Child Protective Services (CPS) (%)	37.7
Substance Use	
Ever used alcohol (%)	87.5
Mean days used alcohol in past 30 days	13.7 (10.3)
Ever used marijuana (%)	79.8
Mean days used marijuana in past 30 days	8.1 (11.0)
Ever used crack cocaine (%)	100
Mean days used in past 30 days (<i>SD</i>)	13.8 (9.5)
Children	
Mean age (<i>SD</i>) in years	14.0 (1.7)
Gender (% female)	59.6
Lifetime substance use	37.0
Ever used cigarettes (%)	26.0
Used cigarettes in past 30 days (%)	17.3
Ever used alcohol (%)	23.1
Used alcohol in past 30 days (%)	14.4
Ever used marijuana (%)	26.4
Used marijuana in past 30 days (%)	20.7

previous samples of African-American drug-using women (Wechsberg et al., 2004). The RRBA is based on the Risk Behavior Assessment, which has demonstrated acceptable reliability (test–retest of 0.7 or higher) and validity (Weatherby, Needle, Cesari, & Booth, 1994) for self-reported drug use. For the present analyses, current maternal substance use was recorded as the number of days in the past month in which any alcohol, marijuana, or other illicit drugs were used.

Maternal Psychological Distress. Maternal report of depression, anxiety, and traumatic stress symptoms were assessed within the past 90 days. The Drug Abuse Treatment AIDS Risk depression and anxiety scales (Simpson, 1998) have demonstrated adequate reliability (Griffith, Logan, Nucatola, & Joe, 1997) and established screening cutoffs for clinical risk (Dennis, 1998). Each scale consists of seven items measured on a 5-point scale ranging from never (0) to almost always (4). These scales yielded acceptable internal consistency (depression: $\alpha = .62$ and anxiety: $\alpha = .84$). The Traumatic Stress Disorder Index, adapted from the established civilian

Table II. Bivariate Pearson Correlations Between Child Age and Gender, Maternal Covariates, Parenting, and Child Substance Use

	1	2	3	4	5	6	7	8	9
1 Child Substance Use	—								
2 Child Age	.498**	—							
3 Gender	-.061	.007	—						
4 Maternal psychological symptoms	.016	.076	-.064	—					
5 Maternal substance use (days)	.022	.015	-.032	.143*	—				
6 Maternal warmth	-.158**	-.233**	.124	-.068	-.159*	—			
7 Family Conflict	.220**	.197**	.085	.202**	.140*	-.315**	—		
8 Maternal-child closeness	-.262**	-.231**	.042	-.121	-.158*	.585**	-.390**	—	
9 Maternal control/Supervision	-.306**	-.309**	.132	-.044	-.112	.396**	-.157*	.303**	—
10 Maternal disapproval of youth substance use	-.509**	-.502**	.126	-.068	-.167*	.441**	-.179**	.448**	.428**

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

version of the Mississippi PTSD scale (Kulka et al., 1990), has been used with young adult drug users (Titus, Dennis, White, Scott & Funk, 2003) to assess the presence of extreme or complex stress disorder symptoms. Mothers rated the presence of symptoms on a 4-point Likert scale ranging from never (0) to always (4). In this sample, the scale demonstrated excellent internal consistency ($\alpha = .90$). A total psychological distress score was calculated by summing items on each of these scales.

Independent Variables: Parenting

Parenting Control and Relationship Quality. The Family scale of the Family, Friends, and Self Scale (Simpson & McBride, 1992) was used to assess youth report of three parenting dimensions: warmth; parent control and supervision; and conflict. Each subscale was comprised of four items that correlated most strongly with each composite subscale, as reported by the developers, and included items such as [Warmth:] *How often does your mother tell you she loves and cares about you?*; [Control/Supervision:] *How often does your mother punish you in some way when you do something wrong? Does your mother let you go anywhere you please without asking?*; and [Conflict:] *Do members of your family say bad things about each other?* It should be noted that although conflict items referred to family members generally, interviewers asked youth to think about their mother when answering these questions. Youth responded on a 5-point Likert scale, ranging from 0 = never, to 4 = almost always. This scale has shown adequate reliability and validity with high-risk minority youth (Simpson & McBride, 1992). Internal consistency was strong, with alphas of .65 (control/supervision), .82 (warmth), and .83 (conflict).

Maternal-Child Relationship. The maternal-child relationship was assessed with two items taken from National Household Survey on Drug Abuse (NHSDA) [Office of

Applied Studies (OAS), 2000]. These items yielded excellent reliability in this sample ($\alpha = .84$), and include the questions, *How close do you feel with your mother?* and *How much do you believe your mother cares about you?* rated on a 5-point scale; higher scores indicate greater perceived closeness.

Maternal Disapproval of Youth Substance Use. Questions assessing youth perceptions of maternal approval or disapproval of their substance use were adapted from the youth interview of the NHSDA (OAS, 2000). Youths were asked, *“How do you think your mother would feel about you trying or using (cigarettes, alcohol, marijuana, crack cocaine, or other illicit drugs)?”* with responses ranging from 1 = approve to 4 = strongly disapprove ($\alpha = .79$). A summary measure of maternal disapproval was created by averaging youths' responses across the items.

Results

Preliminary analyses

Analyses were conducted with the 208 dyads and were performed using SPSS for Windows Version 14. The average number of days of past month substance use was 4.22. Youth who currently used substances (28%) reported using an average of 15.3 days.

First, correlations were calculated among the predictor parenting variables, covariates (maternal psychological symptoms and current substance use), and youth substance use to identify any parenting variables not significantly correlated (2-tailed, $p < .05$) with youth substance use. Correlations among variables also were examined for evidence of collinearity. Correlations among parenting variables, child age and gender, maternal covariates, and child substance use in the past 30 days are presented in Table II. All parenting variables were significantly related to child substance use ($p < .01$),

with correlations ranging from $-.158$ to $-.509$. Effect sizes were small ($r < .30$) for associations between child substance use and maternal warmth, family conflict, and maternal-child closeness. Medium effect sizes ($.30 < r < .50$) were observed between child substance use and maternal control and disapproval of youth substance use. Youth age, but not gender, was significantly associated with current substance use.

Regression Analyses

Hierarchical linear regression analyses were used to examine the relationship between child age, gender, and the five parenting variables after controlling for maternal psychological symptoms and current substance use on youth substance use. All continuous variables were centered prior to analyses to decrease the potential for collinearity (Aiken & West, 1991; Holmbeck, 2002) and to aid interpretation of the results. In the first step, maternal psychological symptoms and current substance use were entered. In the second step, child gender and age were entered. In the third step, the five parenting variables of interest (maternal-child closeness, family conflict, maternal warmth, maternal control/supervision, and perceived maternal disapproval of substance use) were entered. In the fourth and final step, interactions between the parenting variables of interest and age were entered to examine the potential moderating effect of age. Table III summarizes the multiple hierarchical linear regression analyses, including the interaction terms. Due to the difficulty in interpreting main effects in the presence of interaction terms, the table and text present main effect estimates (Aiken & West, 1991). It is noted if the main effect remained when the interaction terms were entered.

In the first step, maternal psychological symptoms and current substance use were not significantly associated with child substance use. At the initial step 2 entry, older age was associated with an increase in substance use ($B = 2.72$, $SE = 0.33$, $p < .001$). There was not a main effect of gender. Progressive models, including the interaction model, maintained these effects. When the parenting variables were entered at step 3, family conflict, maternal warmth, and maternal disapproval of child substance use were significantly associated with child substance use. Youth perceiving higher family conflict ($B = 1.61$, $SE = 0.77$, $p < .039$), higher maternal warmth ($B = 2.14$, $SE = 0.87$, $p = .015$), and lower maternal disapproval of substance use ($B = -7.74$, $SE = 1.73$, $p < .001$) had higher levels of current substance use. In the interaction model, only maternal disapproval

of substance use main effects remained significant ($B = -4.26$, $SE = 1.93$, $p = .029$); maternal warmth was marginally significant ($B = 1.512$, $SE = 0.87$, $p = .083$), and family conflict was not significant ($B = 1.04$, $SE = 0.76$, $p = .173$). This finding suggests that effects of maternal warmth and conflict were conditional upon other independent variables in the model.

The final model, including interaction terms, explained 43% of the variance in child substance use. Of the block of interaction terms entered at step 4, only the age \times family conflict and age \times maternal disapproval of substance use interactions were significant. The two significant interaction terms were probed using post hoc procedures recommended by Aiken & West (1991) and Holmbeck (2002). Age was recoded into two new variables: high age (1 *SD* above the mean) and low age (1 *SD* below the mean). Two new interaction terms were computed between the family variable and high age/low age. Two regressions for child substance use were run, one to generate the slope for the family variable with the high age condition and one to generate the slope for the low age condition. Then, the regression lines were plotted substituting the high (1 *SD* above the mean) and low (1 *SD* below the mean) values of the family variable.

Figure 1 presents the relationship between family conflict, child substance use, and child age. The effect of family conflict on child substance use varied by age. Among older adolescents, those with a high level of family conflict were more likely to use substances compared with those with a lower level of family conflict ($t = 3.65$, $p < .001$). The relationship between family conflict and substance use was not significant for younger adolescents ($t = -.91$, $p = .367$).

Figure 2 presents the relationship between maternal disapproval and child substance use. The effect of maternal disapproval on child substance use varied by age. Among older youth, maternal disapproval was protective against substance use; those with a higher level of maternal disapproval were less likely to use substances compared with those reporting less disapproval ($t = -5.35$, $p < .001$). This relationship was not found for younger adolescents ($t = 0.04$, $p = .969$).

Discussion

This study examined the main and interactive effects of parenting behaviors and maternal-child relationship quality and child age on youths' substance use in the past month among children of African-American mothers

Table III. Summary of Multiple Hierarchical Regression Analyses of Influences on Child Substance Use ($n = 208$)

Variables	B ^a	SE	β^a	R ²	R ² _Δ
Step 1					
Maternal psychological symptoms	0.024	0.083	.020	.001	.001
Maternal current substance use	0.007	.039	.013		
Step 2					
Female gender	-1.29	1.17	-.07	.25	.25***
Age	2.72	.33	.50***		
Step 3					
Maternal-child closeness	-1.03	1.04	-.08	.37	.12***
Family conflict	1.61	.77	.13*		
Maternal warmth	2.14	.87	.18*		
Maternal control and supervision	-1.22	.82	-.10		
Maternal disapproval of youth substance use	-7.74	1.73	-.34***		
Step 4					
Age × Maternal-Child Closeness	-0.03	.58	-.01	.43	.06***
Age × Family Conflict	1.14	.43	.17**		
Age × Maternal Warmth	0.47	.49	.07		
Age × Maternal Control/Supervision	-0.45	.44	-.07		
Age × Maternal Disapproval of Youth Substance Use	-2.37	.96	-.20*		

Note: All continuous variables were centered at their means.

^aRegression weights at entry into the model.

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



Figure 1. Relationship between family conflict and child substance use as moderated by child age (** $p < .001$).

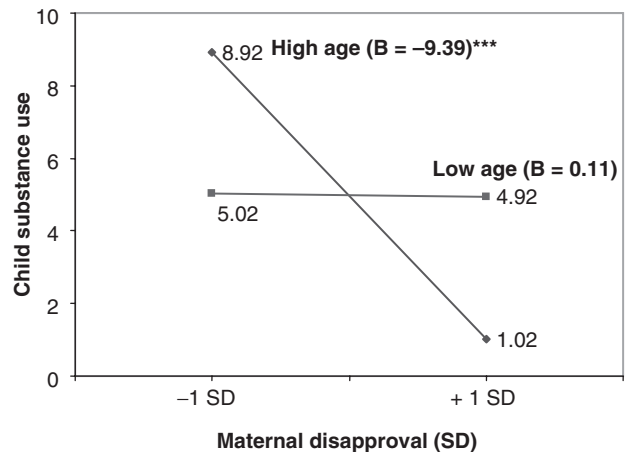


Figure 2. Relationship between maternal disapproval and child substance use as moderated by child age ($p < .001$).

who use crack cocaine, but are not in treatment. As predicted, results showed main effects of older youth age, lower perceived maternal disapproval, and higher family conflict on increased substance use risk. A main effect was also found between higher maternal warmth and youth current substance use. This main effect of maternal warmth as a risk factor was consistent with prior research (Andrews, Hops, & Duncan, 1997; Foshee & Bauman, 1992) which has suggested that parent-child warmth may exacerbate youth substance use risk when a mother is a substance user.

The main effects of maternal warmth and conflict, however, were attenuated by the addition of interaction terms between parenting variables and child age, while main effects of maternal disapproval remained significant. The interaction terms between parenting variables and child age yielded significant effects of maternal disapproval and family conflict among older children only. The disappearance of main effects of maternal warmth may have been a factor of its strong correlation with disapproval, which in turn was moderated by child age. The lack of robust effects of parental warmth on youth

outcomes was contrary to evidence that parent–child relationships may be more protective in African-American families relative to other race/ethnic groups (Pettit, Bates, & Dodge, 1997), and may have reflected other influences related to mothers' crack use in the present sample. Additionally, the lack of hypothesized main effects of parental monitoring, control and supervision behaviors on youth substance use was surprising. Previous research with children of drug users has demonstrated their strong effects even when examined simultaneously with other affective parenting qualities (Stanger et al., 2004). However, consistent with other research (Dishion & McMahon, 1998), the five parenting variables included in the present study were moderately interrelated, and may have interfered with independent effects that likely manifest when examined in isolation. Given the mixed empirical evidence, further research is needed to clarify the influence of parent–child relationships across child development and in relationship to other parenting dimensions.

The present study findings were consistent with Dembo et al. (1986) who found clear trends toward inverse, protective influences of parent–child relations on youth substance use. Among older adolescents in the present study, increased conflict in the family related to higher levels of youth substance use. This finding was contrary to Kelley and Fals-Stewart (in press), who found stronger relationships between parent functioning and children's adjustment for preadolescents versus older adolescents. However, their parent functioning measures did not focus on parenting behaviors or warmth. The age-dependent association between maternal–child relationships and youth substance use might be expected in the present sample given developmental differences in children in the sensitive period of early to late adolescence which mark the beginning of autonomy development and experimentation (Dishion, Kavanagh, & Kiesner, 1998). Children develop relationships with others outside of the family, changing the degree of influence of parents (Stanton, Li, Pack, Cottrell, Harris, & Burns, 2002).

The present study differed from Stanger et al. (2004), who found significant associations between child externalizing behaviors and parenting behaviors (e.g., inconsistent discipline, poor monitoring), but not parent–child relationship variables (e.g., affection and praise). Also, Stanger and colleagues found only main effects of age on parenting and child externalizing problems. Differences between the Stanger study and the present one were numerous, including different child outcomes

(attention problems, aggression, and rule-breaking vs. substance use), treatment versus community sample, age ranges of sample children (2–18 years vs. 12–17 years), and proportion of two-parent families (67% vs. 16%) all of which challenge comparability of the two studies and likely explain the different findings.

In this sample of children of maternal drug users, the more youth believed that their mothers would disapprove if they used substances, the less likely they were to currently use substances; this finding was true for older children only. Thus, social learning models emphasizing prosocial parental role models may have operated in a more complex fashion in families with a parental drug user. Although they covertly or overtly model drug use, findings suggested that mothers can counteract some negative effects of their dysfunctional modeling by expressing disapproval of their children's use during teenage years of risky experimentation.

Study Limitations

Cross-sectional limitations of the study warrant caution in interpretation of potential causal or directional effects; that is, the variables identified as having significant relationships with youth substance use were merely associated, but were not necessarily predictive of this youth risk behavior. Indeed, the parenting variables may have been consequences of youth behavior rather than causes. In addition, although the parenting measures were reliable and have some evidence of validity through use in other studies and other populations, they did not comprehensively assess parenting behaviors and norms or attachment in ways that fully capture the multidimensionality of parenting. Similarly, although the maternal psychological subscales have demonstrated some reliability and validity in effectively screening for clinical levels of risk (Dennis, 1998), the measure as a whole is limited in its ability to yield diagnoses. That this maternal psychological symptoms covariate was not significantly related to child substance use in the present study remains inconclusive, and should be replicated with well-established, psychometrically sound measures with similar populations.

Like most community-based studies of illicit drug users, the representativeness of this sample is unknown. However, targeted sampling procedures used in this study were developed specifically to increase the representativeness of hidden samples of drug users (Cunningham-Williams et al., 1999). Sample characteristics suggest comparability with other samples of African-American

women who use crack living in the US (Sterk, 1999; Wechsberg et al., 2004).

Practice and Research Implications

Despite the limitations, these findings underscore the importance of disentangling parenting influences on youth risk within high-risk families headed by a mother who uses crack cocaine. Moreover, findings offer promise that specific, potentially malleable parenting practices such as expression of disapproval of antisocial behaviors may help protect youth even when mothers use drugs. Drug treatment can benefit both parents and children (Kelley & Fals-Stewart, 2002), however the majority of drug users in need do not receive such services (Green-Hennessy, 2002). Accessible, community-based interventions are needed that reduce family conflict and help mothers express disapproval of substance use to their teenagers.

While the present study increases our understanding of how parenting might confer both risk and protection on youth, many research questions remain. Longitudinal studies are sorely needed to examine relative influences of parenting dimensions on child behaviors, and perhaps more importantly, how these relationships change across development. Such study designs are critical to identifying resiliency indicators for youth outcomes that are sensitive to development, such as substance use and sex risk, for children of drug users. While some mothers who use drugs will require treatment first and foremost, many can nonetheless benefit from parenting interventions to reduce intergenerational transmission of risk behaviors.

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