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The Impact of Parenting on Risk Cognitions and Risk Behavior: A Study of Mediation and Moderation in a Panel of African American Adolescents

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Hypotheses concerning the extent to which adolescents' cognitions mediate the relation between parenting behaviors and adolescent substance use were examined in a panel of African American adolescents ($N = 714$, M age at Time 1 = 10.51 years) and their primary caregivers. A nested-model approach indicated that effective parenting (i.e., monitoring of the child's activities, communication about substances, and parental warmth) was related to adolescent substance use more than 5 years later. The parenting behaviors protected the adolescent from subsequent alcohol, tobacco, and marijuana use through associations with two cognitive elements from the prototype/willingness model: favorable risk images (prototypes) and behavioral willingness. Additional analyses indicated that these protective effects were strongest among families residing in high-risk neighborhoods.

It is generally agreed that a wide variety of risk factors contribute to adolescents' vulnerability to use alcohol, tobacco, and other drugs. Hawkins, Catalano, and Miller (1992) identified 17 known risk factors for adolescent substance use, which they discussed in terms of three general categories: (a) contextual factors, such as norms, substance availability, and neighborhood disorganization; (b) individual factors, such as prodrug attitudes and physiological factors; and (c) interpersonal factors arising from children's interactions in family, school, and peer environments. Few studies, however, have included factors from each of these categories or examined how they may interact in determining adolescent risk behaviors.

Moreover, research suggests that the risk factors described by Hawkins et al. (1992) may not apply equally to adolescents from different race and ethnic backgrounds. For example, there is evidence that African American adolescents have stronger bonds to family than do White adolescents (Giordano, Cernkovich, & Demaris, 1993). Past studies have also revealed differences among racial and ethnic groups in family management styles, particularly in terms of parental monitoring and control of peer selection (Peterson, Hawkins, Abbot, & Catalano, 1994). This research suggests that for African American youth, the family environment may be more protective than for White youth (Wallace & Muroff, 2002). Such discrepancies have led some to conclude that additional race-specific research is needed to identify the protective factors that reduce substance use among African American adolescents (Wallace & Muroff, 2002).

Parental Influence on Adolescent Substance Use

Several studies have concluded that peer socialization factors are the strongest predictors of adolescent substance use (Brook, Whiteman, Czeisler, Shapiro, & Cohen, 1997). However, some authors have noted that peer influences, relative to parental influences, may be overestimated (Aseltine, 1995; Bauman & Ennett, 1996; Kandel, 1996). In fact, many researchers have focused on the indirect effects of parenting style on adolescent outcomes. This research has provided evidence that family process factors play a central role in determining associations with deviant peers, which in turn predict adolescent risk behaviors (Dishion, Capaldi, Spracklen, & Li, 1995; Whitbeck, 1999).

A substantial body of literature also suggests that parents' behaviors may directly affect their children's risk behaviors (Blanton, Gibbons, Gerrard, Conger, & Smith, 1997; Brown, Mounts, Lamborn, & Steinberg, 1993). Adolescents raised by parents who are heavily involved in their lives (i.e., monitor their behavior) are less likely to engage in risk behavior (Leventhal & Brooks-Gunn, 2000; Li, Stanton, &

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Feigelman, 2000). Similarly, provision of warmth and support by parents is associated with less adolescent substance use (Barnes, Reifman, Farrell, & Dintcheff, 2000; Barnow, Schuckit, Lucht, John, & Freyberger, 2002). There is also some evidence that parent–child communication about substances and substance use is associated with reduced risk of early-onset use (Chassin, Presson, Todd, Rose, & Sherman, 1998; Jackson & Henriksen, 1997), although that evidence is mixed (see Ennet, Bauman, Foshee, Pemberton, & Hicks, 2001).

Parents can also indirectly affect their children's behavior by influencing the attitudes and cognitions that their children develop about substance use and substance users. For instance, Sieving, Maruyama, Williams, and Perry (2000) reported that parents' attitudes toward underage drinking were indirectly related to their children's alcohol use through their association with the children's alcohol-related cognitions (i.e., intentions to drink, refusal efficacy, and perceived importance of reasons not to drink). Likewise, research has shown that the link between parental alcohol-use norms and subsequent adolescent alcohol use is mediated through the children's alcohol-use norms (Brody, Ge, Katz, & Arias, 2000) and that frequent and bidirectional parent–child discussions were associated with less liberal (i.e., abstinence-based) alcohol-use norms (Brody, Flor, Hollett-Wright, & McCoy, 1998).

Few researchers, however, have examined the extent to which children's cognitions mediate the relation between (effective) parenting behaviors and children's substance use. Consequently, several adolescent-risk researchers have suggested that there is a need for research that looks at cognitive mediation of the relation between parenting behaviors and substance use (e.g., Beyth-Marom & Fischhoff, 1997; Gochman, 1992). Such research is especially important in light of findings that suggest that risk factors—particularly cognitive risk factors—may play different roles for different ethnic groups (Ellickson & Morton, 1999). The current study addressed this empirical need by incorporating elements from a recently developed model of health risk behavior, the prototype/willingness (prototype) model.

The Prototype/Willingness Model

Cognitive mediation is the focus of the prototype model of adolescent health behavior (Gibbons & Gerrard, 1995) used in the current study. The model is described in detail elsewhere (Gibbons & Gerrard, 1997; Gibbons, Gerrard, & Lane, 2003); a brief overview is presented here. The model is based on two primary assumptions about adolescent risk behavior: (a) it is largely a social activity and (b) it is often a reaction to risk-conducive circumstances rather than deliberative or planned. These two assumptions are reflected in the two focal constructs for the model: risk images (prototypes) and behavioral willingness.

Risk Images

Young people have clear social images of the type of person their age who engages in a particular risk behavior (e.g., the ''typical'' smoker or drinker; cf. Chassin, Presson, Sherman, Corty, & Olshavsky, 1981). They also realize that if they engage in the behavior in public, others will tend to associate them with the behavior and the image. In this sense, the images are social consequences of the behaviors. The more acceptable the image is to the adolescent, the more willing he or she is to engage in the behavior if the opportunity arises (Blanton et al., 1997; Gibbons, Gerrard, & Boney-McCoy, 1995). Risk images (or prototypes) have been shown to predict a variety of health risk behaviors, such as sexual risk taking, alcohol consumption, smoking, and reckless driving (Gerrard, Gibbons, Benthin, & Hessling, 1996; Gibbons et al., 1995; Thornton, Gibbons, & Gerrard, 2002; see Gibbons et al., 2003, for a review).

Behavioral Willingness

When asked, most adolescents say they do not intend to engage in risky behavior (Brown, Di Clemente, & Reynolds, 1991); nonetheless, as statistics indicate, many end up doing so (Johnston, O'Malley, & Bachman, 2000). The prototype model explains this incongruence by proposing that there are two pathways to risk behavior instead of the single path found in most models of health and social behavior. One path is intentional; the other is not. The former pathway proceeds to behavior through behavioral intention (Ajzen, 1985, 1991). The second path proceeds through an additional proximal antecedent, unique to the prototype model—behavioral willingness. Behavioral willingness is defined as an openness to risk opportunity—what an adolescent might do under certain circumstances. Behavioral willingness adds to the amount of variance in adolescent risk behavior that can be predicted by the antecedent of behavioral intention (Gibbons et al., 2003). To maximize predictive power, both behavioral willingness and intention were included in the current study in a construct labeled *susceptibility*.

Other Factors That Influence Adolescent Substance Use

Another domain of risk factors includes individual or dispositional factors such as sensation seeking (risk-taking tendencies), which have been shown to predict adolescent substance use (Shen, Locke-Wellman, & Hill, 2001; Wickrama, Conger, Wallace, & Elder, 1999; Wills, Windle, & Clearly, 1998; Wills et al., 2001). It has been suggested that a risk-taking tendency has a predisposing role for substance use (Wills, Vaccaro, & McNamara, 1994). Controlling for this trait provides some protection against spurious results arising from a common disposition among adolescents willing to engage in risky behaviors, including substance use.

Hawkins et al. (1992) also described several contextual factors that influence adolescent substance use. In fact, considerable attention has recently been devoted to the impact of context (neighborhood) on children's health (Rankin & Quane, 2000). Generally, this research has found that adolescents who live in more disadvantaged (high-risk) neighborhoods tend to fare less well than those who reside in more advantaged neighborhoods (Leventhal & Brooks-Gunn, 2000). For instance, neighborhood risk has been associated with decreased academic performance (Gonzales, Cauce, Friedman, & Mason, 1996), affiliation with deviant peers (Brody et al., 2003), delinquent behavior (Peeples & Loeber, 1994), and higher rates of substance use (e.g., Brook, Nomura, & Cohen, 1988; Smart, Adlaf, & Walsh, 1994). Most of this research has been conducted among urban and inner-city youth; however, less is known about how neighborhood risk factors influence adolescent substance use in rural communities or suburban areas.

There is also evidence that neighborhood risk factors may moderate the effects of parenting behaviors (e.g., monitoring and supervision of children) on several adolescent outcomes (Rankin & Quane, 2002). For example, Gonzales et al. (1996) found that higher levels of parental control were prospectively associated with higher academic achievement (GPA) in neighborhoods perceived by the adolescent as high risk; a negative relation between maternal control and GPA was found in low-risk neighborhoods. Nonetheless, both studies were limited to samples of African American children residing in only large urban areas.

The Current Study

The current study is part of a larger project, the Family and Community Health Study (FACHS), which is examining the impact of environmental factors on the mental and physical health of African American families living in contexts other than inner cities. Several cross-sectional studies have examined the influence of neighborhood context on negative adolescent outcomes using the FACHS panel. Brody et al. (2001) found that children's (but not caregivers') reports of nurturant-involved parenting significantly interacted with a measure of neighborhood disadvantage to predict their affiliation with deviant peers. Brody et al. (2003) concluded that caregivers' reports of their own parenting behaviors were associated with children's conduct disorder symptoms, and again, this relation was strongest among families residing in high-risk neighborhoods. However, Simons et al. (2002) found that the relation between caregivers' appraisals of their parenting behaviors and child conduct problems tended to decrease as the level of community deviance, as perceived by caregivers, increased.

Thus, although it is clear that a warm and involved parenting style is associated with healthy youth development, current knowledge about how these processes unfold over time is limited, especially among nonurban African American adolescents. Some clarification of this issue has been provided by other research conducted with the FACHS sample. For example, Gerrard, Gibbons, Stock, Vande Lune, and Cleveland (2005) found that parental behaviors were associated with risk images and behavioral willingness, which predicted initiation of smoking. However, these findings were limited because parenting, risk images, and behavioral willingness were measured concurrently, constraining the interpretation of effective parenting as antecedent to risk cognitions. The present study used three waves of data to address this need.

The present research had two related objectives. The primary goal was to determine the extent to which cognitive factors mediated the relation between parenting behaviors and substance use among African American adolescents, a population for whom little evidence is available (Bachman et al., 1991; Vaccaro & Wills, 1998). Our model is presented in Figure 1. In addition to a direct influence, parenting behaviors at Time 1 were also hypothesized to have indirect effects on Time 3 adolescent substance use by way of associations with Time 2 risk images and susceptibility. Because there is substantial evidence that parenting behaviors influence adolescents' associations with substance-using peers, the model also allowed for indirect effects of parenting on Time 3 use through its association with Time 2 friends' use. The theoretical model controlled for individual factors (risk-taking tendencies, gender, and age) and contextual factors

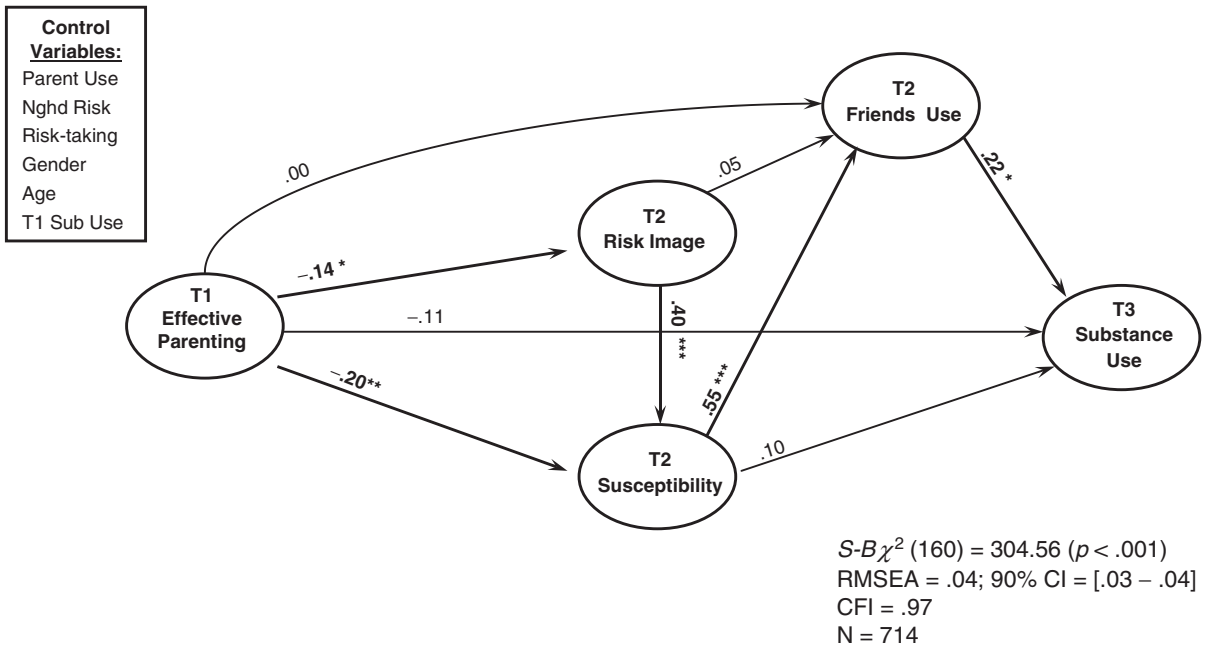

Figure 1. Structural model estimated using LISREL 8.70 with robust standard errors. Coefficients represent completely standardized maximum likelihood estimates; significant paths are in bold. Nghd risk = neighborhood risk; S – B χ^2 = Satorra – Bentler scaled chi-square statistic; RMSEA = root mean square error of approximation; CI = confidence interval; CFI = comparative fit index. $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

(parent substance use and neighborhood risk) as well as the targets' Time 1 use.

A second goal of this study was to investigate how the relations among parenting behaviors, friends' use, and risk cognitions may differ according to neighborhood context. We hypothesized that effective parenting would have a greater impact on adolescents' risk cognitions in high-risk than in low-risk environments.

Method

Participants

A total of 897 families, 475 in Iowa and 422 in Georgia, were recruited for participation in the FACHS. Each family had an African American fifth-grade target child ages 10 (52%), 11 (45%), or 12 years old (3%) at Time 1. Slightly more than half (54%) of the targets were female. Separate but concurrent interviews were given to the target and his or her primary caregiver, defined as a person living in the same household who was primarily responsible for the target's care. Of the 897 families, 779 (87%) remained in the panel at Time 2, and 767 (86%) remained in the panel at Time 3. The present analyses include the 714 families that were present at all three waves.

Of the 714 primary caregivers (parents), most (84%) were the targets' biological mothers (37% of whom were married at Time 1); the rest were biological fathers (5%), grandmothers (6%), or someone else (5%). Almost all (91%) of the parents identified themselves as African American; their mean age at Time 1 was 37 (range = 23 to 80) and their educational backgrounds were diverse, ranging from less than a high school diploma (19%) to a bachelor's or advanced degree (10%).

Sampling Strategy, Recruitment, and Interview Procedures

Families were recruited for FACHS from multiple sites that varied considerably on demographic characteristics, such as racial composition and economic level. Sites included rural farm communities, suburban areas, and small metropolitan areas; there were no inner-city regions. Particular attention was paid to sampling families from neighborhoods with varying racial composition (e.g., percentage African American) and economic level (percentage of families with children living below the poverty line). Potential participants were chosen randomly from lists of families living in neighborhoods with at least 10% African American population. The lists, compiled by community liaisons around Athens, Georgia, and school officials in Des Moines and Waterloo, Iowa, included all families with a 10-year-old or fifth-grade African American child. The families received an introductory letter, followed by a recruit-

ment phone call and then a personal visit requesting that the target child and his or her parent participate in the study. In case a telephone was not available, the letter included a toll-free number. Complete data were gathered from 72% of the families on the recruitment lists. The majority who declined cited the amount of time the interview took as the reason not to participate (for further description of the FACHS sample and its recruitment, see Brody et al., 2001; Cutrona, Russell, Hessling, Brown, & Murry, 2000; Gibbons, Gerrard, Cleveland, Wills, & Brody, 2004; Simons et al., 2002; Wills, Gibbons, Gerrard, & Brody, 2000). In general, the sample was representative of the African American populations in the communities from which they were selected.

Interview Procedure

All interviewers were African American; most resided in the communities where the study took place. Interviews were conducted in participants' homes, or in locations near their homes (e.g., a library or school). The interview required two separate visits with two interviewers and lasted 90 min, on average. It included a computer-assisted personal interview (CAPI) and a structured psychiatric diagnostic assessment. In the CAPI, questions appeared on the computer screen and, when necessary, were read aloud to the participant. Parents received $100 and targets received $70 for their participation. The second wave of data collection occurred approximately 2 years after the first wave ($M = 25$ months), and the third wave of data collection occurred slightly more than 3 years after the second ($M = 38$ months).

The instruments and procedures were exactly the same at Times 1 and 2, but changes were implemented at Time 3. Parents and targets were both interviewed at Time 3 in one visit rather than two. The parents also completed a pencil-and-paper questionnaire that was mailed to them in advance and turned it in to the interviewers at the time of the home visit. In addition, the interviews and questionnaires were revised, discarding many old questions and adding new ones to reflect an increased maturity of the targets. At Time 3, the targets were given an accessory keypad to enter their own responses to sensitive questions. The participation stipend at Time 3 remained the same for parents but increased to $80 for targets.

Measures

Most of the measures were adapted from previous research with families and older adolescents (Gerrard et al., 1996; Gibbons, Gerrard, Blanton, & Russell, 1998). The variables were grouped together according to four domains: control, parenting, mediating, and outcome. Parenting and control variables were all measured at Time 1. The mediating variables (friends' use, risk images, and susceptibility) were measured at Time 2. The outcome variable (targets' substance use) was measured at Times 1 and 3.

Control Variables

Parent substance use. The parent interview included two measures of tobacco use (e.g., ''On average, how many cigarettes, cigars, pipes of tobacco do you usually smoke per day?''). Parents also completed the University of Michigan Composite International Diagnostic Instrument (UM–CIDI; Kessler et al., 1994), which included three measures of alcohol use (e.g., ''In the past 12 months, did you have at least 12 drinks of any kind?'') and six measures of problematic use (e.g., ''Have you ever been arrested for DWI?''). Parents were also provided with a list of 21 drugs, plus a general use item (''any other drugs'') and asked to indicate any that they had used more than five times. The 33 items were standardized and combined into a single index ($\alpha = .87$).

Neighborhood context. Targets completed a six-item neighborhood risk scale, which assessed the frequency with which various acts (e.g., fights with weapons, violent arguments between neighbors) occurred in their neighborhood. The response format for the items was a 3-point scale ranging from 1 (*never*) to 3 (*often*; $\alpha = .74$). Parents completed a seven-item community disorganization scale (adapted from Sampson, Raudenbush, & Earls, 1997), which asked the extent to which various indicators of neighborhood problems (e.g., drinking in public, people selling or using drugs, groups hanging out and causing trouble) occurred in their neighborhoods. The response format for these items was also a 3-point scale ranging from 1 (*not at all a problem*) to 3 (*a big problem*; $\alpha = .90$). The two scales were combined into a single indicator by averaging the mean of each scale.

Risk-taking tendency. The six-item risk-taking scale, adapted from Eysenck and Eysenck's (1977) inventory, included items such as ''You enjoy taking risks'' and ''You would prefer doing something dangerous rather than sitting quietly,'' each accompanied by a 3-point scale ranging from 1 (*not at all true*) to 3 (*very true*). The six items were combined to create a single indicator of targets' risk-taking tendency ($\alpha = .59$).

Additional control variables. Two other control variables were also included in the structural equation model (SEM)—targets' gender (0 = male, 1 = female) and age at Time 1 (10, 11, or 12 years).

Parenting Variables

Effective parenting. Separate subscales assessed the targets' perceptions of three aspects of effective parenting at Time 1. Previous research has shown that these measures correlate with observer ratings of parental behavior and predict a variety of child adjustment problems (Conger, Elder, Lorenz, Simons, & Whitbeck, 1992; Simons, 1996). Monitoring was assessed with five items (e.g., "How often does your [parent] know what you do after school?"), each followed by a 4-point scale ranging from 1 (*never*) to 4 (*always;* $\alpha = .61$). The communication subscale contained three items that assessed adolescents' perceptions of the extent to which their parents communicated with them about alcohol, cigarette, and marijuana use, each followed by a 4-point scale ranging from 1 (*never*) to 4 (*many times*; $\alpha = .90$). The warmth measure included nine items (e.g., "How often in the last 12 months did your [caregiver] let you know she really cares about you?"), each followed by a 4-point scale ranging from 1 (*never*) to (*always*; $\alpha = .82$). The three subscales were used as indicators of the parenting latent construct (overall $\alpha = .81$).

Mediating Variables

Friends' substance use. Targets' perceptions of their friends' use were assessed using the stem, "During the past 12 months, how many of your close friends . . . " followed by a list of eight substances, each with a 3-point scale ranging from 1 (*none of them*) to 3 (*all of them*). Friends' use of alcohol was indexed by combining the items: "used alcohol" and "drunk a lot of alcohol." An index of friends' other drug use was created by combining items for illegal drugs, prescription drugs, inhalants, nonprescription drugs, and other drugs. These two indexes and the item "used tobacco" were used as three indicators of the friends' substance use latent construct (overall $\alpha = .82$).

Risk images. To assess risk images, the child was first asked to think about three specific prototypes, presented separately in the following manner: "Take a moment to think about the type of kid your age who . . . " "smokes cigarettes," "frequently drinks alcohol," and "uses drugs." In each case, targets described their image of the person (i.e., image favorability) using six adjectives: *popular*, *smart*, *cool*, *good looking*, *childish*, and *dull* (the last two reversed so that higher scores indicated a more favorable image), each accompanied by a 4-point scale ranging from 1 (*not at all*) to 4 (*very*; Gibbons & Gerrard, 1995). The three prototypes were assessed separately and then used as three indicators of the risk image latent construct in the SEM (overall $\alpha = .89$).

Susceptibility to use. Targets' willingness was measured with a pair of items for each substance, worded as in previous studies (Gibbons et al., 1998). The section began with a description of a hypothetical scenario: "Suppose you were with a group of friends and there were some [cigarettes/alcohol/drugs] there that you could have if you wanted." This statement was followed by a light and a heavier use question (e.g., "How willing would you be to take some and use it?" and "How willing would you be to use enough to get high?" or "How willing would you be to drink one drink?" and "How willing would you be to drink more than one drink?"), each accompanied by a 3-point scale ranging from 1 (*not at all*) to 3 (*very willing*). Susceptibility also included two measures of intentions for each substance: one a straight intention item and the other an expectation or likelihood item (Warshaw & Davis, 1985). For smoking and drugs, the straight intention items were: "Do you plan to [smoke cigarettes/use drugs] in the next year?" followed by a 4-point scale ranging from 1 (*do not*) to 4 (*do plan to*). The expectation items read: "How *likely* is it that you will [smoke cigarettes/use drugs] in the next year?" followed by a 4-point scale ranging from 1 (*definitely will not*) to 4 (*definitely will*). For each of the drug measures, a fifth option, "don't know," was added in the middle slot. For alcohol, the two questions were: "How much alcohol [do you plan/are you likely] to drink in the next year?" followed by a 3-point scale ranging from 1 (*none*) to 3 (*3 or more drinks at one time*). The tobacco and drug options were then collapsed into three categories, using the following code: 1 = do not, 2 = probably won't, 3 = probably will and plan to; for drugs, the "don't know" option was also included in the second category. Thus, as with willingness, there were two 3-point scales (in essence, *no*, *maybe*, and *yes*) for each of the three substances for intention and expectation. The willingness, intention, and expectation scales were then combined for each of the three substances and used as indicators of the latent susceptibility construct (overall $\alpha = .88$).

Outcome Variable

At Time 1, targets were presented with computerized versions of the Diagnostic Interview Sche-

dule for Children, Version 4 (DISC–IV; Shaffer et al., 1993), which included dichotomous (0 = no, 1 = yes) measures for lifetime and past year use of alcohol, tobacco, and marijuana. The sum of the three lifetime use items was used to create an index of Time 1 substance use (range = 0 to 3). The target interview at Time 3 included frequency measures of alcohol, tobacco, and marijuana use. Past year use of alcohol and marijuana were measured by asking, ''During the past 12 months, how often have you [had a lot to drink, that is 3 or more drinks at one time/used marijuana to get high]?'' Each of these items was measured on a 6-point scale ranging from 1 (*never*) to 6 (*several times per week* [alcohol]) or 6 (*more than once a week* [marijuana]). Tobacco use in the previous 3 months was measured by asking, ''How many cigarettes have you smoked in the last 3 months?'' This item was measured on a 5-point scale ranging from 1 (*I have not smoked in the last 3 months*) to 5 (*I have smoked every day*). The three items were used as indicators of the latent Time 3 substance use construct ($\alpha = .64$).

Results

Attrition Analyses

Four groups were created to test for differences among those who were present at different waves. Group 1 ($n = 65$) was present at only Time 1, Group 2 ($n = 65$) was present at Times 1 and 2, Group 3 ($n = 53$) was present at Times 1 and 3, and Group 4 ($n = 714$) was present at Times 1, 2, and 3. Univariate analyses of variance (ANOVAs), conducted on each of the items used in the SEM, found no significant differences among the groups. Next, a second set of attrition analyses was conducted by collapsing the first three groups and comparing the families who were present at all three waves with those present for only one or two waves. Independent samples t tests indicated that compared with targets with complete data, attriters reported lower levels of target marijuana prototypes, $t(895) = -2.07$, $p = .039$; target susceptibility, $t(895) = -2.16$, $p = .031$; and lower levels of parent-reported neighborhood risk, $t(895) = -2.00$, $p = .045$.

Descriptive Statistics

Table 1 presents the frequencies of targets reporting lifetime and past year use of each of the three substances (at Time 1) alone and in combination. At Time 1, 91% reported that they had never used any of the three substances and 98% reported that they had not used any substance in the past year. Alcohol was the most commonly reported substance used. At Time 3, the number reporting use increased to 18% (alcohol or marijuana use in the previous year), and 12% reported tobacco use in the previous 3 months. Frequent (more than once a week) use of marijuana and tobacco was reported by 4% of the targets; 1% reported using alcohol at least weekly.

Table 1
Frequency of Respondents Reporting Lifetime and Past Year Use of Alcohol, Cigarettes, and Marijuana at Time 1

Substance used	Ever	Past year
None	646	697
One substance only	58	16
Two substances	8	1
All three substances	2	0

Univariate ANOVAs were also performed to test for mean differences of the study variables by gender and neighborhood condition (using a median split). Compared with females, males reported higher risk-taking tendencies, $F(1, 710) = 7.07$, $p = .008$, and affiliations with substance-using peers at Time 1, $F(1, 710) = 5.56$, $p = .019$. At Time 2, female targets reported more favorable risk images, $F(1, 710) = 7.30$, $p = .007$, and greater susceptibility to use, $F(1, 710) = 8.94$, $p = .003$. Targets residing in high-risk neighborhoods were younger than their counterparts, $F(1, 708) = 4.39$, $p = .036$; and reported higher levels of risk-taking tendencies, $F(1, 710) = 8.13$, $p = .004$; and lower levels of effective parenting, $F(1, 710) = 6.27$, $p = .012$. Targets in high-risk neighborhoods also reported greater affiliations with substance-using peers, more susceptibility to use, and more favorable risk images, all Fs$(1, 710) > 10.00$, ps$< .001$. At Time 2, targets in high-risk neighborhoods reported higher levels of friends' use, $F(1, 710) = 5.89$, $p = .016$, and more favorable risk images, $F(1, 710) = 2.96$, $p = .086$. No significant Gender $\times$ Neighborhood interactions were found.

SEM: Plan of Analysis

SEM, using LISREL 8.70 (Jöreskog & Sörbom, 2004a), was used to estimate the hypothesized model. First, a confirmatory factor analysis (CFA) was conducted to determine whether the observed measures loaded on the latent constructs as hypothesized. We then compared our theoretical model with three alternative models. The first model estimated only a direct path from parenting behaviors to adolescent substance use. All other paths in the baseline model were constrained to zero, suggesting that the

influence of parenting on adolescent use was entirely direct. The second model retained the direct path from the baseline model and added the indirect influence of parenting on adolescent substance use through its associations with friends' use. The next alternative model also retained the direct path from the baseline model but allowed for indirect effects only through the elements of the prototype model—risk images and susceptibility. The final step in the nested model approach represented our hypothesized model. This model allowed for direct effects of parenting in addition to both indirect pathways—through friends' use as well as elements of the prototype model. We hypothesized that this model would provide the best fit to the data, confirming that the effects of parenting behaviors on adolescent substance use were mediated through the elements of the prototype model in addition to peer use.

Using normal-theory estimation techniques such as maximum likelihood (ML) with non-normal data may lead to overestimation of the chi-square goodness-of-fit test while underestimating standard errors and indexes of fit (West, Finch, & Curran, 1995). Thus, the data were examined for univariate and multivariate normality using PRELIS 2.70 (Jöreskog & Sörbom, 2004b). Several measured items exhibited violations of univariate normality (skewness >3, kurtosis >10; Kline, 1998). Hence, the fit of all SEMs was assessed using the Satorra–Bentler scaled chi-square statistic (S–B χ^2; Satorra & Bentler, 1988) and robust (adjusted for multivariate nonnormality) standard errors. Nested models were compared by using a difference test scaling correction, calculated from the ratio of the normal theory to S–B χ^2 test statistics (Satorra & Bentler, 2001). A significant reduction in chi-square, relative to change in degrees of freedom, indicates that the less constrained model provides a better fit to the data than the more constrained model. Model fit was also evaluated with the comparative fit index (CFI; Bentler, 1990) and the root mean square error of approximation (RMSEA; Browne & Cudek, 1993). CFI values greater than .90 and RMSEA values less than .05 indicate good fit. We also calculated 90% confidence intervals (CI) for the RMSEA values. Ideally, the lower limit of the 90% CI includes or is very near zero and the upper limit is less than .08.

SEM: The Measurement Model

All constructs were specified as latent with multiple indicators except the control variables, which were manifest. The CFA was estimated using ML in LISREL 8.70 with the asymptotic covariance matrix; thus, robust standard errors and the S–B χ^2 were provided. The measurement model provided a good fit to the data, as indicated by the fit indexes (CFI = .98, RMSEA = .04, 90% CI = .03–.04) even though the S–B χ^2 test statistic was significant, S–B $\chi^2(140, N = 714) = 266.32$, $p < .001$. All factor loadings were significant; standardized values were $\geq .44$ with one exception—the communication subscale of the parenting latent construct ($\lambda = .24$). Table 2 presents the correlation matrix as well as means, standard deviations, skewness, kurtosis, and standardized factor loadings of the items used in the SEM.

SEM: Hierarchical Testing of Alternative Models

Direct Effects Model

The first step in the hierarchical testing was to fit a model that specified only a direct path from effective parenting behaviors to Time 3 adolescent use. All other paths in the model were constrained to zero. The fit of this model (see Table 3) was adequate (CFI = .92, RMSEA = .06, 90% CI = .05–.06), but the relatively high chi-square value indicated that there was room for fit improvement, S–B $\chi^2(168, N = 714) = 587.87$, $p < .001$. The direct effect of parenting behaviors on Time 3 use in the model was significant ($\beta = -.19$, $t = -2.34$, $p = .020$).

Friends' Use-Only Model

Next, we fit a model that retained the direct path from effective parenting to Time 3 use and added additional paths from parenting to Time 2 friends' use and from Time 2 friends' use to Time 3 use. The fit of this model was also adequate (CFI = .93, RMSEA = .06, 90% CI = .05–.06) but again resulted in a relatively high chi-square value, S–B $\chi^2(166, N = 714) = 530.94$, $p < .001$. In this model, the direct path from effective parenting to Time 2 friends' use was significant ($\beta = -.13$, $t = -1.94$, $p = .053$), and Time 2 friends' use significantly predicted Time 3 use ($\beta = .28$, $t = 3.54$, $p < .001$). Adding Time 2 friends' use as an intervening variable resulted in a slight decrease of the direct effect of parenting at Time 3 ($\beta = -.13$, $t = -1.91$, $p = .057$).

Prototype-Only Model

In the third step we fit a model that again retained the direct path from effective parenting to Time 3 use but added paths from parenting to Time 2 risk images and susceptibility, Time 2 risk images to Time 2 susceptibility, and from Time 2 susceptibility to Time

Table 2
Correlations, Means, Standard Deviations, Skewness, Kurtosis, and Standardized Factor Loadings for the Measurement Model

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	T1 Par Use[a]	–																				
2	T1 Nghd	.13	–																			
3	T1 Risk	.03	.09	–																		
4	Gender	−.03	.04	−.09	–																	
5	T1 Age	−.03	−.08	.04	.00	–																
6	T1 Sub use	.18	.05	.12	.02	.06	–															
7	T1 Comm	.04	.03	−.02	.14	−.05	−.03	–														
8	T1 Monitor	−.04	−.13	−.28	.07	.07	−.13	.14	–													
9	T1 Warmth	−.06	−.09	−.22	−.04	−.02	−.17	.20	.42	–												
10	T2 Image alc	.10	.07	.10	.09	.09	.13	−.02	−.03	−.14	–											
11	T2 Image mar	.07	.09	.09	.07	.05	.11	−.01	−.06	−.13	.69	–										
12	T2 Image tob	.07	.05	.06	.12	.04	.12	−.03	.01	−.13	.76	.67	–									
13	T2 Susc alc	.07	.03	.12	.09	.10	.22	−.09	−.12	−.16	.32	.29	.24	–								
14	T2 Susc mar	.10	.02	.11	.13	.09	.15	−.08	−.09	−.12	.29	.35	.27	.57	–							
15	T2 Susc tob	.01	.01	.13	.07	.06	.18	−.06	−.12	−.15	.31	.27	.31	.51	.53	–						
16	T2 Frd alc	.04	.07	.12	.01	.11	.22	.01	−.11	−.09	.26	.23	.19	.48	.31	.33	–					
17	T2 Frd mar	.02	.10	.07	.04	.09	.16	.03	−.09	−.10	.17	.14	.14	.27	.28	.25	.62	–				
18	T2 Frd tob	.03	.03	.10	.04	.09	.13	.04	−.04	−.07	.23	.22	.24	.35	.32	.34	.61	.51	–			
19	T3 Use alc	.02	.01	.14	−.02	.08	.11	.06	−.11	−.06	.09	.12	.07	.20	.11	.12	.18	.12	.18	–		
20	T3 Use mar	.05	.07	.10	.01	.08	.13	.07	−.09	−.02	.12	.15	.14	.10	.16	.15	.17	.18	.19	.52	–	
21	T3 Use tob	.01	−.03	.09	−.07	.10	.03	−.03	−.08	−.08	.06	.06	.06	.03	.04	.10	.10	.07	.08	.29	.34	–
	M	0.00	1.43	1.49	0.54	10.50	0.11	2.75	3.39	3.42	1.72	1.68	1.81	1.10	1.06	1.10	1.19	1.10	1.27	1.31	1.42	1.25
	SD	0.46	0.40	.40	–	0.56	0.37	1.14	0.55	0.54	0.62	0.64	0.62	0.28	0.21	0.27	0.36	0.21	0.47	0.80	1.13	0.80
	Skewness	6.85	1.05	.86	–	0.51	3.85	−0.35	−0.83	−0.98	0.61	0.76	0.44	3.55	4.94	3.52	1.87	2.39	1.43	3.23	3.06	3.54
	Kurtosis	73.11	0.51	.510	–	−0.81	17.29	−1.38	0.07	0.45	−0.28	−0.12	−0.63	15.05	30.51	14.23	2.72	6.08	0.95	11.37	8.73	12.26
	Loading	1.00	1.00	1.00	1.00	1.00	1.00	0.24	0.68	0.63	0.89	0.78	0.85	0.77	0.73	0.69	0.86	0.71	0.71	0.69	0.75	0.44
	(*t* ratio)	–	–	–	–	–	–	–	4.97	4.98	–	22.48	24.69	–	9.02	6.56	–	13.78	14.64	–	6.13	4.61

Note. $N = 714$. All variables coded such that high scores indicate more of the construct. T1 = Time 1; par use = parent self-report of substance use; nghd = parents' and targets' reports of neighborhood risk; risk = targets' self-report of risk-taking tendencies; gender = 0 refers to male, 1 refers to female; sub use = targets' self-report of alcohol, tobacco, and marijuana use; comm = targets' reports communication with parents; monitor = targets' report of parental monitoring; warmth = targets' report of parental warmth; alc = alcohol; mar = marijuana; tob = tobacco; image = risk image; susc = susceptibility to use; frd = targets' reports of friends' use.
[a]Standardized. All correlations $\geq .07$, $p < .05$; $\geq .10$, $p < .01$; $\geq .12$, $p < .001$.

Table 3
Chi-Square Statistics, Fit Indexes, and Direct Effects of Parenting for Alternative Models

Model	S-B χ^2	χ^2	*df*	*p*	RMSEA			Direct effect	Variance explained
					CFI	ε	CI		
Direct effects only	587.87	699.71	168	.00	.92	.06	(.05 – .06)	– 2.34	.03
Friends' use only	530.94	660.02	166	.00	.93	.06	(.05 – .06)	– 1.91	.11
Prototype only	426.16	553.46	164	.00	.95	.05	(.04 – .05)	– 1.67	.08
Hypothesized	304.56	371.95	160	.00	.97	.04	(.03 – .04)	– 1.66	.11

Note. $N = 714$. The Satorra – Bentler scaled chi-square statistic (S – B χ^2) was used to evaluate model fit. However, the normal chi-square (χ^2) is also required when testing for differences between two nested models. Therefore, both are presented in the table. ε = root mean square error of approximation (RMSEA) point estimate; CI = 90% confidence interval for the RMSEA value. Direct effect values represent *t* values of the direct effect of parenting on Time 3 adolescent substance use. Variance explained refers to the percentage of variance in Time 3 adolescent substance by the variables in the model.

3 use. The fit of this model was slightly improved (CFI = .95, RMSEA = .05, 90% CI = .04 – .05) but once more resulted in a relatively high chi-square value, S – B $\chi^2(164, N = 714) = 426.16$, $p < .001$. In this model, parenting had significant direct effects on both Time 2 risk images ($\beta = -.14$, $t = -2.49$, $p = .013$) and susceptibility ($\beta = -.20$, $t = -2.80$, $p = .005$). In addition, risk images significantly predicted susceptibility ($\beta = .41$, $t = 6.24$, $p < .001$), which significantly predicted Time 3 use ($\beta = .23$, $t = 2.54$, $p = .011$). Adding the elements of the prototype model as intervening variables resulted in the direct effect of parenting on Time 3 again decreasing ($\beta = -.11$, $t = -1.67$, $p = .095$).

Hypothesized Model

The final step consisted of a model that allowed the influence of parenting on Time 3 use to include direct effects, and indirect effects through friends' use as well as the risk cognitions. The fit of this model was good (CFI = .97, RMSEA = .04, 90% CI = .03 – .04), although the chi-square value remained significant, S – B $\chi^2(160, N = 714) = 304.56$, $p < .001$. The hypothesized model represented a better fit to the data when compared with either the friends' use-only model, ΔS – B $\chi^2(6) = 157.79$, $p < .001$, or the prototype-only model, ΔS – B $\chi^2(4) = 41.29$, $p < .001$. The fit of the hypothesized model was also compared with the direct effects model. S – B χ^2 difference tests showed a dramatic improvement in fit for the more constrained model, ΔS – B $\chi^2(8) = 575.25$, $p < .001$.

As seen in Figure 1, parenting continued to have significant direct effects on both risk images ($\beta = -.14$, $t = -2.48$, $p = .013$) and susceptibility ($\beta = -.20$, $t = -2.85$, $p = .005$). However, the direct effect of parenting on friends' use was now nonsignificant, as was the effect of susceptibility on Time 3 use. Targets' risk images were associated with vulnerability ($\beta = .40$, $t = 6.47$, $p < .001$), which significantly predicted friends' use ($\beta = .55$, $t = 7.49$, $p < .001$). Compared with the friends' use-only model, the direct effect of friends' use on Time 3 use decreased slightly but remained significant ($\beta = .22$, $t = 2.39$, $p = .017$). The direct effect of parenting on Time 3 use was not significant; however, parenting did have significant indirect effects on both friends' use ($\beta = -.15$, $t = -3.33$, $p < .001$) and T3 use ($\beta = -.06$, $t = -1.98$, $p = .048$). Together, the direct and indirect effects of parenting behaviors explained 11% of the variance in Time 3 adolescent substance use.

Neighborhood and Parenting Interaction

The next step in our analyses concerned the hypothesis that effective parenting would have a greater impact on adolescents' risk cognitions in high-risk than in low-risk environments. Some research has demonstrated that the S – B χ^2 difference test may not perform properly unless the sample size is large, especially if high kurtosis is present in the data (West et al., 1995). These conditions were present in our data and precluded us from using multisample SEM analyses to test the moderation hypothesis. However, other empirical evidence has shown that ordinary least squares regression has more power to detect statistical interaction than multisample SEM (e.g., Stone-Romero & Anderson, 1994). Thus, the anticipated moderating effects of neighborhood context on parenting were examined by conducting a series of hierarchical regressions predicting risk images, susceptibility, friends' use, and targets' own use.

In each case, the parenting and neighborhood risk variables were centered, and an interaction term was created by multiplying the two centered variables. All three terms were then sequentially entered as

Table 4
Effective Parenting and Neighborhood Risk as Predictors of Target Risk Images, Susceptibility, and Friends' Use

	Parenting		Neighborhood		P × N	
Outcome variable	ß	*t* ratio	ß	*t* ratio	ß	*t* ratio
Risk images						
Time 1	−.17	−4.73	.11	3.01	−.05	*ns*
Time 2	−.10	−2.67[a]	.07	1.83	−.07	−1.99[a]
Susceptibility						
Time 1	−.29	−8.19	.06	*ns*	−.09	−2.57
Time 2	−.20	−5.27[a]	.01	*ns*	−.02	*ns*
Friends' use						
Time 1	−.16	−4.50	.18	5.05	−.11	−3.03
Time 2	−.08	−2.06	.08	2.10	.00	*ns*
Targets' Use						
Time 1	−.15	−4.12	.03	*ns*	−.10	−2.73
Time 3	−.06	−1.63	.02	*ns*	−.02	*ns*

Note. $N = 714$. Parenting = Time 1 effective parenting behaviors; neighborhood = Time 1 neighborhood risk; P × N = interaction term of effective parenting by neighborhood risk; ß = standardized beta coefficient.
[a]Value remained significant ($p < .08$) after controlling for outcome variable at Time 1.

predictors in separate models for the four outcome variables at Times 1 and 2 (Time 3 for target use). As seen in Table 4, effective parenting was a significant predictor for all of the mediating variables (including changes in risk images and susceptibility) and Time 1 use. Neighborhood risk had significant effects on two of the outcomes: risk images and friends' use. The interaction term was significant for four of the outcome variables: susceptibility, friends' use, targets' use at Time 1, and risk images at Time 2. In all cases, the pattern was as expected: Targets' were more likely to report higher levels of risk cognitions or behaviors if they lived in a high-risk neighborhood and reported lower levels of effective parenting. Figure 2 represents an example of the interactions and displays the results of the regression predicting Time 2 risk images, following the procedures outlined by Aiken and West (1991). As seen in the figure, the dashed line, which represents the relationship between effective parenting and Time 2 risk images for adolescents residing in high-risk neighborhoods (1 *SD* above the mean), has a steeper slope than the solid line, which represents adolescents residing in low-risk neighborhoods (1 *SD* below the mean).

Discussion

Parental Influence

The current data provide evidence that parenting behaviors (communication, monitoring, and warmth) were associated with African American adolescents' substance use that occurred, on average, 5 years later and that this influence was primarily indirect. Through a nested models approach, support for the mediation of effective parenting behaviors on subsequent use through both the child's peer associations and cognitions was noteworthy. Our hypothesized model, which included indirect effects through both of these pathways, resulted in the direct effect of Time 1 parenting on Time 3 adolescent use becoming nonsignificant. However, parenting was predictive of both elements of the

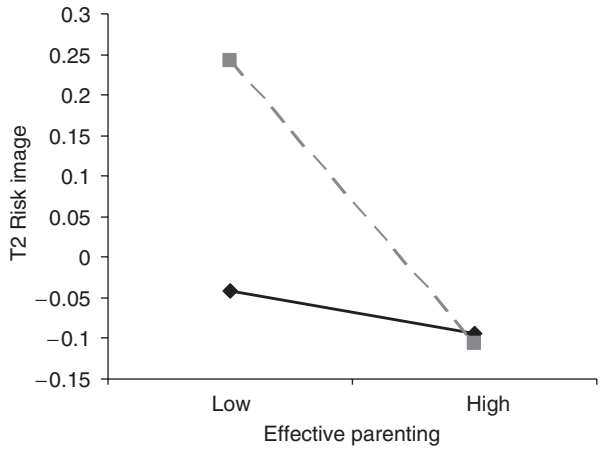

Figure 2. Graph depicting the association between effective parenting and Time 2 (T2) risk images for adolescents living in high- and low-risk neighborhoods. Dashed lines represent adolescents who reside in neighborhoods 1 *SD* above the mean on level of risk; solid lines represent adolescents who reside in neighborhoods 1 *SD* below the mean on level of risk.

prototype model. Adolescents who reported receiving effective parenting had more negative risk images and less susceptibility to use substances themselves, 2 years later. Together, these indirect relations accounted for a significant amount of the total effect of parenting behaviors on both the adolescents' reports of Time 2 peer use and their own substance use.

These effects existed after controlling for several individual- and contextual-level control variables. Recent research has demonstrated that African American adolescents are more likely than other youth to be exposed to contextual-level risk factors, such as neighborhood risk (Wallace & Muroff, 2002). Therefore, these results provide one possible explanation for the paradoxical finding that African American adolescents report lower rates of substance use than their White counterparts, despite their relatively higher exposure to such risk-promoting factors (Bachman et al., 1991; Johnston et al., 2000; Wallace & Muroff, 2002). In this sample, effective parenting predicted less favorable adolescent substance-use cognitions, which in turn were related to less risk behavior. Thus, adolescents who reported that they received higher levels of parental communication, monitoring, and warmth were offered some protection against the risk factors described by Hawkins et al. (1992).

Additional evidence of effective parents' protective role for African American youth was found in the regression analyses, which also showed that such behaviors were more powerful than neighborhood risk factors in predicting several youth outcomes. Furthermore, interaction analyses revealed that among families who resided in high-risk neighborhoods, these parenting strategies were more effective at reducing contemporaneous measures of susceptibility to use and targets' reports of their friends' use as well as their own use. These results are consistent with other research that has found that effective parenting can act as a buffer against the deleterious effects of high-risk neighborhoods (e.g., Brody et al., 2001, 2003; Gonzales et al., 1996; Rankin & Quane, 2002). Perhaps most important, among families in high-risk neighborhoods, effective parenting was associated with desired changes in adolescents' risk images (i.e., becoming less favorable).

Such effects on cognitions are especially important because most adolescent substance use occurs outside the home, when parents are not around. It appears that adolescents with involved parents approach such situations armed with risk-reducing beliefs. Because adolescent substance use is largely a social phenomenon (Gibbons & Gerrard, 1997), this relation (parenting and risk images) has much intuitive appeal as an area worthy of further exploration. Adolescents are very image conscious (Carroll, Durkin, Hattie, & Houghton, 1997; Elkind, 1978; Lloyd & Lucas, 1998), and previous studies with older adolescents and young adults have indicated that the images can be altered and that making them more negative is associated with a decline in behavioral willingness (Gerrard et al., in press; Gibbons et al., 2004). Specifically, parents can help children realize that they, like their friends, do not have very favorable risk images. Therefore, altering their images—making them more negative—is likely to reduce their willingness to engage in substance use. Although this pathway represents just one of many ways that parent behaviors can affect their children's use of substances, we believe the findings in this study are important, particularly in light of evidence that suggests that reducing African American adolescents' prorisk cognitions is likely to reduce their later use of hard drugs (Ellickson & Morton, 1991).

The findings reported here replicate earlier cross-sectional studies conducted with the FACHS panel, which have used Census-level economic data to study neighborhood effects on African American adolescent outcomes (Brody et al., 2001, 2003). These studies also found that effective parenting can act as a buffer against the deleterious effects of high-risk neighborhoods. This conclusion, however, contrasts with the results by Simons et al. (2002), who found that parental control behaviors tended to become less effective in preventing childhood conduct disorders as caregivers' perceptions of neighborhood risk increased.

These differences may be explained by studies that show that parents and children often perceive their neighborhoods differently (Burton, Price-Spratlen, & Spencer, 1996), and other research that has found discrepancies in parent and child assessments of family processes (Brody & Sigel, 1990). More specifically, research has also shown that the perceptions of parents and their young adolescents usually do not correlate well (Achenbach, McConaughy, & Howell, 1987; Hartos & Power, 2000) and that adolescents' perceptions of parenting behaviors (whether accurate or not) are often more effective predictors of adolescent behaviors than are their parents' self-reports of parenting (Brody et al., 2001; Smetana, Crean, & Daddis, 2002). The significant, yet modest, correlation between the targets' and parents' report of neighborhood in this study ($r = .33$, $p < .001$) indicated that although there was some overlap between the two sources of information, they were not redundant.

Limitations

Several limitations of this study should be acknowledged. First, the mediating variables in the SEM were all measured at Time 2. Thus, it is possible that different ordering of these variables may yield different path coefficients. Future analyses with this panel, including additional waves of data, will allow for estimation of models that help clarify the causal direction of these relations. Furthermore, with the exception of the parents' report of neighborhood risk, all other constructs in the model were measured using adolescent self-reports. This introduces the possibility that shared method variance may limit the interpretation of these results, particularly with regard to perceptions of parenting behaviors and friends' substance use. However, as noted earlier, research suggests that adolescents' perceptions of their parents' behaviors are more effective predictors of their own behaviors than are their parents' self-reports (Brody et al., 2001; Smetana et al., 2002). We also agree with the conclusion that parental behaviors are most meaningful to the extent that they are filtered through the child's perceptions (Fletcher, Steinberg, & Williams-Wheeler, 2004). Future research with the FACHS panel will allow us to address some of these concerns by including measures of peers' actual substance use.

It should also be noted that the participants in this study were very young—97% of the targets were either 10 or 11 years old at Time 1. Thus, there was very little initial substance use (more than 90% reported never trying alcohol, tobacco, or marijuana) and not a lot of use to predict at Time 3. These rates are consistent with other research that has examined early-onset substance use (e.g., Kaplow, Curran, Dodge, & The Conduct Problem Prevention Research Group, 2002; Oxford, Harachi, Catalano, & Abbott, 2000; Simons-Morton, 2002). We used statistical methods that account for such skewed data; however, it is important to note that our model accounted for a modest 11% of the variance in target Time 3 use. Although the 5-year lag in this study is a long time for early adolescents, there remained a significant amount of variation in adolescents' substance use that was not accounted for by the constructs in our model.

Nonetheless, the influence of parental behaviors on early teenage children is especially important to consider given that research has shown the significance of early use in terms of later use and abuse (Anthony & Petronis, 1995; Guy, Smith, & Bentler, 1994) and the importance of preventing early onset of use (e.g., Wills et al., 2001, 1998). In particular, research has indicated that African American adolescents report less substance use than White adolescents (Johnston et al., 2000), whereas indicators of substance abuse (e.g., clinic admissions) are usually higher among African American adults than White adults (Substance Abuse and Mental Health Service Administration, 2002). This discrepancy has been called the racial cross-over effect, and it has puzzled researchers for some time (Biafora & Zimmerman, 1998). This phenomenon illustrates another reason why research examining protective factors against early use is needed in African American populations.

Another drawback associated with the use of young adolescents is that their cognitions are not yet well formed and tend to be unstable. This is reflected in the low reliabilities of some of the constructs. As indicated earlier, this instability is an advantage, in terms of mutability, but it is also a methodological disadvantage. It is important to bear in mind that the current study was concerned with African American families who reside in rural and suburban areas. Although this group is underrepresented in the adolescent risk literature, the results reported here may not generalize to other ethnic and racial groups or to African American families in urban areas. This is an area ripe for exploration and deserves further attention. Finally, because a significant majority of the parents were biological mothers, the results may not generalize to other types of parent–child relationships, such as for fathers. This is another area worthy of further study.

Conclusion

The present study represents one of the few to examine the cognitions involved in early adolescent substance use; fewer still have examined these relations among African American youth. We believe that the findings in this study may provide some clues to understand how to prevent early adolescent use (and later abuse) among children in this underrepresented population. The current results are encouraging because the parenting construct consisted of things that most parents can do—provide warmth and support, monitor their children's behavior, and communicate with their children about substances. These everyday interactions were shown to be associated with African American adolescents' cognitions about substance use and actual substance use, both concurrently and several years in the future. Furthermore, these parental behaviors were effective even in the presence of several well-documented risk factors, and they were especially effective when risk opportunities were (relatively) common.

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