

Parental Mediators of Associations Between Perceived Authoritative Parenting and Early Adolescent Substance Use

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Abstract:

Assessed in this study was whether a variety of specific parental behaviors mediated associations between perceived authoritative parenting and early adolescent substance use. Eighth-grade students (N= 182) completed questionnaires about their perceptions of parental warmth, behavioral control, and psychological autonomy granting, which were used to compute a measure of perceived parental authoritative parenting. Adolescents indicated their perceptions of parents' acceptance of, and likely responses to, substance use. During telephone interviews, one parent of each of 113 adolescents indicated the extent to which he or she used specific strategies aimed at preventing offspring from engaging in substance use. Perceived authoritative parenting was associated with lower levels of substance use among boys and among girls. Perceived parental disciplinary consequences of engaging in substance use mediated associations between perceived authoritative parenting and girls' substance use. Associations between perceived parental authoritative parenting and boys' substance use were not linked by any specific parental behaviors.

Article:

Developmental researchers consistently have found that a particular aspect of parenting, referred to as parenting style, is associated with, and predictive of, a wide range of indicators of adolescent competence. Earlier parenting-style research (Baumrind, 1967, 1971) conceptualized parents of young children as falling into three groups. *Authoritative* parents were described as high in warmth (authoritative parents are involved in children's lives and responsive to their needs) and behavioral control (authoritative parents set clear and age-appropriate limits on children's behavior). In contrast, *authoritarian* parents were described as high in behavioral control but low in warmth, and *permissive* parents were described as low in behavioral control. Working further to refine the concept of parenting style, Maccoby and Martin (1983) proposed that parents varied according to two dimensions: the responsiveness (similar to warmth) and demandingness (similar to behavioral control) they exhibited in relationships with children. By grouping parents according to their levels of responsiveness and demandingness, the Baumrind permissive parents were further divided into two groups: *indulgent* parents were high in responsiveness and low in demandingness, whereas *rejecting* parents were low in responsiveness and demandingness.

Further development and refinement of the parenting-style approach to the study of parental influences has recognized a third dimension of parenting: the extent to which parents exhibit psychological autonomy granting in relationships with offspring. Authoritative parents, in addition to exhibiting high levels of responsiveness and demandingness, also are high in psychological autonomy granting (authoritative parents encourage offspring to develop their own ideas and opinions, even when such opinions might differ from their own, Steinberg, 1990). Steinberg and colleagues have demonstrated that authoritative parenting so conceptualized is strongly associated with adolescent adjustment. Adolescents who perceive their parents to be authoritative are more competent, psychologically and behaviorally, than are their peers who are raised in nonauthoritative homes (Lamborn, Mounts, Steinberg, & Dornbusch, 1991; Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994). Steinberg and colleagues (Fletcher, Darling, Steinberg, & Dornbusch, 1995; Hogue & Steinberg, 1995) also

have recognized that authoritative parenting can be conceptualized as a categorical variable (in which case authoritative parenting is contrasted with authoritarian, indulgent, and indifferent parenting, for example) or as a continuous variable (in which case parents are described as more, as compared to less, authoritative, based on their scores on measures of warmth/responsiveness, behavioral control/demandingness, and psychological autonomy granting). It is the more continuous conceptualization of parental authoritative-ness that was the focus of this study.

The benefits of authoritative parenting have been observed in relation to outcomes ranging from high levels of academic competence to low levels of internalized distress among offspring from authoritative homes (Lamborn et al., 1991; Steinberg et al., 1994). Adolescents from authoritative homes also are less likely to engage in use of alcohol and drugs. It has been suggested (Lamborn et al., 1991) that authoritative parenting might insulate adolescents from experimentation with drugs and alcohol through the emphasis on behavioral accountability and accompanying parental monitoring of offspring's behavior and whereabouts.

Authoritative parenting typically has been conceptualized as a measure of *parenting style*, to be distinguished from *parenting practices*. Parenting-style variables describe the general emotional climate within children's homes. Authoritative parents might differ in the specific manners in which they interact with children, but all authoritative parents share an underlying emphasis on responsiveness to children's specific needs and the importance of behavioral accountability. In contrast, parenting practices are specific, goal-directed behaviors exhibited by parents in interactions with offspring. Individual items to assess parents' positions on the three dimensions of parenting style might tap more behavioral components of parenting. Still, the resulting, more fully developed construct of authoritative parenting is more indicative of the overall emotional climate provided by parents, rather than the way parents behave in specific situations.

The distinction between parenting styles and parenting practices is important (Darling & Steinberg, 1993), and the manner in which the two work together can be complex. For example, authoritative parents (a parenting style) are more likely to be involved in their adolescents' school experiences (a parenting practice). Parental involvement in adolescents' schooling typically has beneficial effects when it involves authoritative parents. However, such involvement is associated with negative outcomes when exhibited by authoritarian parents, who are low in warmth and high in limit setting (Steinberg, Lamborn, Dornbusch, & Darling, 1992).

Clearly, adolescents from authoritative homes would be expected to engage in low levels of drug and alcohol use. Might such an association be accounted for by an increased likelihood of such parents engaging in specific parenting practices intended to lessen the likelihood that substance use would occur among adolescents? In other words, might specific parenting practices mediate observed associations between authoritative parenting and adolescent substance use?

Within the adolescent substance use literature, three parenting practices have emerged as being associated with lower levels of drug and alcohol use. First, parents might prevent children from engaging in drug and alcohol use by imposing disciplinary consequences on adolescents for discovered alcohol use or by communicating to offspring that such consequences will occur should substance use be discovered. Clear and consistent parental discipline has been linked with a decreased likelihood that adolescents will engage in substance use (McCord, 1990). Adolescents who anticipate disciplinary consequences from parents might refrain from substance use out of fear of punishment.

Parents also might try to influence children's choices with regard to use of drugs and alcohol by communicating to offspring disapproval of substance use in general. Stronger parental norms against alcohol use have been implicated as a possible explanation for findings that African American adolescents are less likely to drink alcoholic beverages than are European American adolescents (Petersen, Hawkins, Abbott, & Catalano, 1994). Parental attitudes toward alcohol use have emerged as an even stronger predictor of adolescent alcohol use than is parental alcohol use (Zhang, Welte, & Wiczorek, 1997). Parents who disapprove of substance use would likely express to offspring not only feelings that adolescents should not be using drugs and alcohol but also that

such substance use was inappropriate for individuals of all ages. Parents might hope that children would refrain from using drugs and alcohol either out of respect for parents' intolerance for such use or because children themselves would develop similar ideas concerning the inappropriateness of using drugs and alcohol at any age.

Developmental researchers (e.g., Gecas & Schwalbe, 1986) have suggested that adolescents' perceptions of their parents' characteristics and behaviors might be a more potent influence on well-being than are parents' intended motivations and beliefs or observed parental behaviors. Accordingly, in the current study adolescents reported on their perceptions of authoritative parenting, the likelihood of parent-imposed consequences for substance use, and parental acceptance of substance use. However, it is also of interest to consider whether specific strategies parents deliberately engage in, to attempt to prevent their offspring from using drugs and alcohol, might mediate associations between adolescent-perceived authoritative parenting and adolescent substance use. Such strategies might include talking to children about the dangers of drug and alcohol use, preventing adolescents from spending time in places where drugs and alcohol might be available, or monitoring peer associations. In contrast to the previously mentioned parental characteristics, which were most meaningful in terms of how they were perceived by adolescents, parental strategies deliberately are engaged in by parents and are best understood in terms of parental intent.

Of concern in the current study were two questions regarding the roles of each of these three specific parenting practices (adolescent-perceived parental consequences, adolescent-perceived parental disapproval, and parental strategies) in relation to early adolescent drug and alcohol use. First, would those three parenting practices be associated with adolescent drug and alcohol use? Second, would any of those three factors mediate associations between perceived parental authoritativeness and adolescent substance use?

Those questions were addressed in relation to two aspects of adolescent substance use: *breadth* and *depth*. Breadth of substance use experience can be conceptualized as a measure of the number of different illicit substances an adolescent has tried. Depth of substance use is conceptualized as a measure of the frequency with which adolescents are using any illicit substance to such a degree as to experience feelings of impairment. To some extent, breadth of experience is a measure of experimentation with alcohol and drugs, whereas depth of use is a measure of abuse of drugs and alcohol.

Also of interest was whether perceived authoritative parenting, parenting practices, and adolescent substance use were associated differentially for families of boys as compared to families of girls. Boys tend to engage in more frequent and serious use of alcohol and drugs than do girls (Hawkins et al., 1997; Sommer, 1984). There also is some indication in the adolescent development literature that girls might be more susceptible than are boys to influences from the home in decisions concerning whether to initiate or escalate drug and alcohol use (Fletcher, Darling, & Steinberg, 1995). Accordingly, it was possible that associations between perceived authoritative parenting and substance use, and between parenting practices and substance use, might differ for boys, as compared to girls.

Finally, this research was designed to illuminate the interplay between early adolescent substance use and characteristics of parents. A large number of adolescents today initiate drug and alcohol use in middle school (Johnston, O'Malley, & Bachman, 1986; Mulhall, Stone, & Stone, 1996; Vega & Gil, 1998), making the study of this topic among early adolescents particularly relevant.

METHOD

Participants

Participants were 182 eighth-grade students from a suburban middle school in the southeast portion of the United States. Of the participating students, 69% were European American, 28% were African American, and less than 1% each were Asian and Hispanic American. Fifty-two percent were female and 48% were male. Students' ages ranged from 13 through 16 years, with a modal age of 14 years. Fifty-seven percent of students were from traditional intact families, 24% were from single-parent homes, and 19% lived with one biological parent and one stepparent. Education levels among mothers and fathers of participating adolescents were

assessed by asking adolescents to report the highest grade in school completed by each parent. Parental education levels ranged from less than ninth-grade education to holding a graduate degree. The modal education level among mothers and fathers was receipt of a high school diploma or GED. Parents (99 mothers, 14 fathers) of 113 of those students also participated in the project.

Procedure

During the 1997-1998 school year, parents of eighth-grade students attending the target school were contacted and asked to grant permission for their children to spend about 30 minutes in school answering questions about friends, families, extracurricular activities, and use of alcohol and drugs (some measures were not used for the current report). On the day of data collection, the project was explained to adolescents themselves, who then were asked to provide assent for their own participation. Researchers conducted follow-up telephone interviews with parents to determine the extent to which parents of a subset of adolescents engaged in specific strategies to prevent their children from using drugs and alcohol. A research assistant contacted each family by telephone and asked to schedule a telephone interview with the adult in the home who was primarily responsible for the day-to-day care and supervision of the participating student. Telephone interviews then were conducted by professional telephone interviewers employed by the university with which the authors are affiliated.

Measures

Adolescent -perceived authoritative parenting. Adolescents completed questionnaires designed to measure three dimensions of their perceptions of relationships with parents (Steinberg, Elmen, & Mounts, 1989). The Parental Warmth/Involvement scale (10 items, $\alpha = .75$, sample item, "How often does your family do something fun together?") measures the extent to which parents are involved actively with, and engaged in, their children's lives. The Behavioral Control scale (12 items, $\alpha = .80$, sample item, "Do your parents know exactly where you are most afternoons after school?") assesses adolescents' perceptions of parental monitoring and setting of behavioral limits with their children. The Psychological Autonomy Granting scale (nine items, $\alpha = .66$, sample item, "How often do your parents emphasize that you shouldn't argue with adults?") measures the extent to which parents encourage adolescents to develop their own ideas and express their own opinions. Scales were identical to those used by Steinberg and colleagues in their work on parenting style and adolescent development and have been demonstrated to be linked with, and predictive of, a wide range of positive outcomes that include academic competence, lower levels of problem behavior, and positive psychosocial development (Lamborn et al., 1991; Steinberg et al., 1989, 1994). As in the Steinberg work, items included within each dimension varied according to scale endpoints (e.g., one item scored on a 3-point scale, one item scored on a 5-point scale). Accordingly, for each dimension, items were weighted prior to averaging to yield dimension scores. Sample medians were determined for each of three dimensions of perceived parenting, and families were classified on a 4-point scale to indicate where each fell on median splits. Families were given a "3" (authoritative, $n = 42$) if they scored above sample medians on all three dimensions, a "2" (somewhat authoritative, $n = 58$) if they scored above sample medians on two out of the three dimensions, a "1" (somewhat nonauthoritative, $n = 50$) if they scored above sample medians on only one of the three dimensions, and a "0" (nonauthoritative, $n = 32$) if they scored below sample medians on all three parenting dimensions (Fletcher et al., 1995).

Perceived disciplinary consequences of substance use. Students were asked to answer two questions concerning the extent to which the adolescents believed they themselves would get into trouble at home if their parents knew they were using drugs or alcohol. Questions were, "If your parents knew you were using marijuana or other drugs, do you think you would get in trouble at home?" and "If your parents knew you were drinking beer, wine, or liquor, do you think you would get in trouble at home?" Response options ranged from 1 = *Definitely* through 4 = *Definitely not*. Responses to the two questions were averaged to yield the measure of perceived disciplinary consequences of substance use.

Perceived parental approval of substance use. Adolescents answered two questions to assess the extent to which they believed their parents disapproved of substance use by individuals of all ages. Questions were, "What best describes your parents' feelings about using marijuana or other drugs?" and "What best describes your parents' feelings about drinking beer, wine, or liquor?" Students responded to the questions on a three

point scale with 1 = *It is wrong for everyone*, 2 = *It is OK for adults but wrong for kids my age*, and 3 = *It is OK for everyone*. Responses were averaged to yield the measure of perceived parental approval of substance use. These questions were constructed based on items developed by Jessor, Donovan, and Costa (1992) and Small and Rogers (1995) but were expanded to assess adolescents' perceptions of their parents' beliefs concerning the appropriateness of alcohol and drug use for adults and adolescents, rather than for adolescents only.

Parental strategies to prevent substance use. During the telephone interview, parents responded to seven questions comprising the Parental Strategies to Prevent Substance Use scale developed for this project in an attempt to determine the extent to which parents engaged in behaviors deliberately intended to keep offspring from experimenting with drugs and alcohol.

Parents were asked to rate the frequency with which they engaged in each activity, with response options ranging from 1 = *Never* through 5 = *Very often*. Items were subjected to a factor analysis with a varimax rotation, from which three factors emerged. The first factor related to contact with community others (three items, sample item, "Attend meetings yourself of substance abuse prevention organizations"). The second factor related to restrictions placed on the adolescent (two items, sample item, "Prevent your child from spending time with a friend who might influence him or her to use tobacco, alcohol, or drugs"). The third factor related to communication with the adolescent (two items, sample item, "Talk with your child about the risks of smoking, drinking or taking drugs"). Each of the three subscales emerging from these factors was examined separately in relation to adolescent substance use.

Adolescent substance use. On the basis of the work of Jessor and colleagues (Jessor et al., 1992) and their conceptualization of severity of substance use, two measures of adolescent substance use were developed. The first was designed to measure the extent to which adolescents had experimented with a wide range of types of illicit substances (breadth of usage). Adolescents were asked four questions, one each to assess whether they had ever used alcohol, marijuana, inhalants, and other drugs. Adolescents initially were assigned scores ranging from 0 through 4 to indicate the number of different types of drugs they had ever tried. Responses then were rescaled and adolescents were assigned a score of "1" (never tried any types of substances, $n = 135$), "2" (tried one type of substance, $n = 25$), "3" (tried two types of substances, $n = 16$), and "4" (tried three or more types of substances, $n = 6$). The second measure of substance use was designed to assess the extent to which adolescents used drugs or alcohol to excess (depth of usage) and consisted of adolescents' responses to a single question: "In the past 6 months, what best describes how often you have gotten drunk or high on alcohol or drugs?" Adolescents responded to this question on a 7-point scale ranging from 1 = *Never* through 7 = *Daily*. This question was one originally developed by Jessor and colleagues (Jessor et al., 1992) to assess excessive alcohol use and was altered for inclusion in this project to address excessive use of alcohol and drugs.

Plan of Analysis

The purposes for this study were twofold. A first concern was replication of previous findings that have indicated that high levels of perceived parental authoritative parenting are associated with lower levels of drug and alcohol use among adolescents. A second concern was whether associations between perceived authoritative parenting, a stylistic aspect of parenting, and early-adolescent substance use were mediated by a greater likelihood that authoritative parents engage in specific parenting practices designed to prevent offspring from using drugs and alcohol. To investigate those issues, data analyses were designed to follow the strategies outlined by Baron and Kenny (1986) for establishing mediator relations. Correlation matrices were examined to determine whether potential mediators (perceived parental consequences of substance use, perceived parental approval of substance use, and three types of parental strategies to prevent substance use) would be associated with perceived authoritative parenting and adolescent substance use and to determine whether perceived authoritative parenting would be associated significantly with measures of adolescent substance use. Next, regression analyses were performed, entering perceived authoritative parenting and each of the three specific parenting practices (entered one at a time with authoritative parenting) as predictors of each measure of substance use. These analyses were conducted to determine whether previously significant associations between perceived authoritative parenting and adolescent substance use would be reduced to nonsignificance with the addition of

each of the potential mediators, to indicate mediating relations. Finally, regression analyses were conducted in which perceived authoritative parenting and all of the three types of parenting practices were entered simultaneously as predictors of each measure of adolescent drug and alcohol use. This was done to determine whether effects of any given mediator remained after statistically controlling for associations among differing parenting practices (perceived parental consequences, perceived parental approval of substance use, and three types of parental strategies to prevent substance use).

All analyses were first performed only for families in which mothers participated in telephone interviews. The small number of families in which fathers participated in telephone interviews ($n = 14$) precluded performing analyses separately for these families. Therefore, analyses were repeated to include the families in which mothers participated in telephone interviews and those in which fathers participated in telephone interviews. Results virtually were identical. Accordingly, in the analyses reported here, results from families with mothers and those with fathers providing information about parental strategies to prevent adolescent substance use were combined.

TABLE 1: Means and Standard Deviations of All Model Variables

Variable	Boys		Girls	
	\bar{X}	SD	\bar{X}	SD
Authoritative parenting	1.55	1.04	1.66	1.02
Perceived consequences	3.80	.56	3.82	.54
Perceived approval ^a	1.22	.27	1.36	.39
Community contact	2.46	.77	2.29	.81
Restrictions on adolescent	3.82	1.27	4.18	1.03
Communication with adolescent	3.72	.81	3.67	.91
Number of drugs tried	1.35	.69	1.46	.86
Frequency getting high	1.20	.68	1.31	.90

a. Contrast between boys and girls significant at $p < .01$.

RESULTS

Differences in Mean Variable Levels for Boys and for Girls

Means and standard deviations of all variables are presented in Table 1. Several t-tests were performed to test whether mean levels of all variables differed for boys as compared to girls. Only one significant difference was found. Girls, as compared to boys, perceived their parents to be more approving, in general, of alcohol and drug use, $t(180) = -2.87, p < .01$.

TABLE 2: Bivariate Associations Among All Model Variables

Variable	1	2	3	4	5	6	7	8
1. Authoritative parenting	—	.26*	-.16	-.01	.18	-.02	-.28**	-.23*
2. Perceived consequences	.05	—	-.40**	.19	.11	-.01	-.64**	-.61**
3. Perceived approval	-.06	-.25*	—	.06	-.09	.07	.31**	.28**
4. Community contact	.07	.01	-.01	—	.17	.27*	-.12	-.20
5. Restrictions on adolescent	.19	.06	-.15	.21	—	.14	-.08	.06
6. Communication with adolescent	.15	.11	-.03	.30*	.16	—	-.09	.16
7. Number of drugs tried	-.24*	-.13	.11	.01	.00	-.26	—	.67**
8. Frequency getting high	-.17	-.14	.11	.00	-.00	-.08	.39**	—

NOTE: Correlations for girls are above the diagonal; correlations for boys are below the diagonal.

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

Intercorrelations Among Model Variables

Table 2 presents, separately for boys and for girls, the intercorrelations among authoritative parenting, substance use prevention-oriented parenting practices, and the two measures of drug and alcohol use. Among boys, there were relatively few significant associations among variables. Perceived authoritative parents of boys were likely to have sons who tried fewer types of illicit substances, $r(88) = -.24, p < .05$. Boys who perceived there to be disciplinary consequences of using drugs and alcohol also reported their parents to be more disapproving of drug and alcohol use among individuals of any age, $r(86) = -.25, p < .05$. Parents who engaged in greater amounts of drug prevention-oriented contact with the community also were more likely to communicate with their sons about substance use, $r(58) = .30, p < .05$. Substance use outcomes were correlated

among boys, $r(87) = .39, p < .01$. None of the specific parenting practices intended to prevent children from using drugs and alcohol were associated significantly with either measure of substance use among boys.

In contrast, a number of significant correlations among variables were observed for girls. Parents perceived to be highly authoritative had daughters who had tried fewer drugs, $r(94) = -.28, p < .01$, and had gotten high less frequently during the past 6 months, $r(92) = -.23, p < .05$. Within families of girls, perceived authoritative parenting was associated also with an increased likelihood that daughters would believe there to be disciplinary consequences of substance use, $r(93) = .26, p < .05$. As was observed for boys, girls who perceived there to be disciplinary consequences of substance use also reported their parents to be more disapproving of substance use among individuals of all ages, $r(95) = -.40, p < .01$. Parents who engaged in greater amounts of drug prevention-oriented contact with the community also were more likely to communicate with their daughters about substance use, $r(60) = .27, p < .05$. Among girls, two parenting practices were associated significantly with substance use outcomes. Girls who believed there would be disciplinary consequences from parents resulting from substance use had tried fewer drugs, $r(95) = -.64, p < .01$, and had gotten high less frequently during the past 6 months, $r(93) = -.61, p < .01$, than had their peers who perceived fewer disciplinary consequences of parental substance use. Girls who reported their parents to be highly disapproving of substance use among individuals of any age also had tried fewer drugs, $r(96) = .31, p < .01$, and gotten high less frequently during the past 6 months, $r(94) = .28, p < .01$. Among girls, the two measures of substance use were correlated significantly, $r(94) = .67, p < .01$.

According to the criteria set forth by Baron and Kenny (1986), for a variable to mediate associations between a predictor and an outcome variable, there must be significant associations between the predictor and outcome variables, between the predictor and the potential mediator variables, and between the potential mediator and outcome variables. Among boys, those criteria failed to be met for any of the proposed mediator variables. Among girls, only one parenting practice potentially might have mediated associations between authoritative parenting and substance use. The likelihood that daughters of parents perceived to be more highly authoritative would be less likely to use drugs and alcohol, potentially might have been mediated by the perceptions those girls held concerning disciplinary consequences for substance use imposed by parents.

TABLE 3: Unstandardized (B) and Standardized (β) Regression Coefficients for Relations Between Authoritative Parenting and Perceived Consequences of Substance Use as Predictors of Substance Use Among Adolescent Girls

<i>Outcome</i>	<i>Predictors</i>	<i>B</i>	<i>β</i>	
Number of drugs tried	First regression	Authoritative parenting	-.24	-.28**
	Second regression	Authoritative parenting	-.12	-.14
		Perceived consequences	-.96	-.60**
Frequency getting high	First regression	Authoritative parenting	-.21	-.23*
	Second regression	Authoritative parenting	-.08	-.09
		Perceived consequences	-.98	-.59**

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

Perceived Disciplinary Consequences of Substance Use as a Mediator of Perceived Authoritative Parenting/ Substance Use Associations Among Girls

Because only one parenting practice was identified by correlational analyses as a potential mediator of parental authoritativeness/substance use relationships among girls, and no parenting practices were identified in this role for boys, follow-up regression analyses were performed to identify only one of the potential mediators. Table 3 presents the unstandardized and standardized regression coefficients for the prediction of the two measures of adolescent substance use, first for perceived authoritative parenting alone and second for perceived authoritative parenting and perceived consequences of substance use entered simultaneously. The significant effects of perceived authoritative parenting on number of drugs tried and frequency of getting high were reduced to nonsignificance once the effects of perceived consequences were taken into account in those equations. In addition, perceived consequences predicted number of drugs tried, ($B = -.96, \beta = -.60, t(92) = -7.25, p < .01$) and frequency of getting high or drunk, ($B = -.98, \beta = -.59, t(90) = -6.79, p < .01$), after statistically accounting

for effects of perceived parental authoritative parenting. This indicates that adolescent girls' perceptions of disciplinary consequences of drug or alcohol use mediated the previously significant associations between perceived authoritative parenting and both indicators of substance use. Taken together, the combined effects of perceived authoritative parenting and perceived consequences from parents for substance use accounted for 42% of the variance in the breadth of girls' substance use and 38% of the variance in the depth of girls' substance use.

Perceived Authoritative Parenting and Parenting Practices as Predictors of Adolescent Substance Use

Regression analyses were performed in which perceived authoritative parenting and all parenting practices designed to prevent adolescents from using drugs and alcohol were entered simultaneously as predictors of breadth and depth of substance use (see Table 4). The focus of these analyses was twofold. First, results would demonstrate whether the previously observed role of perceived consequences as a mediator of perceived authoritative parenting/substance use relationships would remain after controlling for the presence of other parenting practices. Second, results would indicate whether any of the parenting practices of interest were associated with adolescent substance use even after statistically controlling for the roles of the other practices. Because this second area of interest was not related to the role of any specific parenting practice as a mediator, these analyses were performed separately for boys and for girls.

TABLE 4: Unstandardized (B) and Standardized (β) Regression Coefficients for Relations Between Authoritative Parenting and Parenting Strategies as Predictors of Adolescent Substance Use

Outcome	Boys		Girls	
	B	β	B	β
Number of drugs tried				
Authoritative parenting	-.15	-.21	-.18	-.21
Perceived consequences	-.05	-.04	-.75	-.43**
Perceived approval	.16	.06	-.05	-.02
Community contact	.08	.09	-.00	-.01
Restrictions on adolescent	.05	.08	.01	.01
Communication with adolescent	-.23	-.26	-.07	-.08
Frequency getting high				
Authoritative parenting	-.03	-.05	-.18	-.21
Perceived consequences	-.20	-.17	-.70	-.40**
Perceived approval	.27	.12	-.20	-.08
Community contact	.01	.01	-.21	-.20
Restrictions on adolescent	.02	.04	.11	.14
Communication with adolescent	-.04	-.06	.19	.20

** $p < .01$.

Among boys, no parenting practices were associated with either measure of substance use. In addition, simultaneously considering perceived parental authoritative parenting and parenting practices reduced to below-significance levels the previously significant association between perceived authoritative parenting and substance use breadth. When perceived authoritative parenting and all parenting practices were considered simultaneously, they accounted for only 13% of the variance in boys' substance use breadth and 7% of the variance in boys' substance use depth.

Among girls, simultaneous consideration of perceived parental authoritative parenting and all three parenting practices yielded only one significant association. Adolescent girls who perceived there to be disciplinary consequences of substance use reported having tried fewer drugs ($B = -.75$, $\beta = -.43$, $t(56) = -3.41$, $p < .01$) and having gotten high less frequently ($B = -.70$, $\beta = -.40$, $t(56) = -3.20$, $p < .01$) than did their peers who perceived fewer such consequences of substance use. Among girls, simultaneous consideration of levels of perceived authoritative parenting and all three parenting practices accounted for 29% of the variance in substance use breadth and 33% of the variance in substance use depth.

DISCUSSION

According to the results reported for this study, adolescent girls who perceived their parents to be authoritative experimented with fewer types of illicit substances and got high or drunk less frequently than did girls who per-

ceived their parents to be less authoritative. Adolescent boys who perceived their parents to be authoritative tried fewer types of drugs than did boys who perceived their parents to be less authoritative. Associations between perceived authoritative parenting and adolescent girls' substance use were mediated by girls' perceptions that there would be disciplinary consequences from parents if substance use was discovered. Greater perceived disciplinary consequences of substance use remained significantly associated with lower levels of drug and alcohol use among daughters, even when statistically controlling for levels of perceived authoritative parenting within the home, perceived parental attitudes toward substance use, and parental strategies for preventing substance use. In contrast, no parenting practices aimed at preventing offspring substance use were associated with boys' substance use patterns once parenting practices were considered simultaneously with levels of perceived parental authoritativeness.

These findings replicated previous work (Lamborn et al., 1991; Steinberg et al., 1994), which indicated stylistic aspects of parenting to be associated with adolescents' choices concerning whether to use drugs and alcohol. When parents were perceived to be authoritative, expressing warmth and support toward their children while simultaneously setting appropriate limits on offsprings' behavior, adolescents were less likely to experiment with drugs and alcohol. There was some indication in the data of the current study that associations between perceived authoritative parenting and adolescent substance use might be more robust among girls than among boys. Still, among boys and girls, lower levels of substance use were linked with perceptions of parenting that reflected parental responsiveness, clear guidelines for behavior, and a respect for children's own beliefs and opinions.

The unique contribution of this study to the parenting style and substance use literatures is based on identification of specific parental behaviors that mediated links between perceived parental authoritativeness and adolescent substance use. Among boys, parental behaviors that would be presumed to be associated with lower levels of drug and alcohol use did not mediate associations between adolescent perceptions of authoritative parenting and boys' substance use. In addition, associations between perceived authoritative parenting and boys' substance use breadth dropped to below significance once parenting practices also were taken into account. Such patterns of findings might be indicative of weaker links between boys' drug and alcohol use and parental behaviors intended to prevent experimentation with such substances.

In contrast, one parenting practice emerged as a mediator of associations between perceived authoritative parenting and substance use among adolescent girls. Parents perceived to be highly authoritative by daughters were more likely to have daughters who believed that should experimentation with drugs and alcohol occur, there would be disciplinary consequences at home. Girls who believed they would get in trouble with their parents if they used drugs and alcohol reported lower levels of substance use depth or breadth than did girls who perceived less severe disciplinary consequences of drug and alcohol use. This mediating role of perceived consequences was interesting especially in light of the lack of gender differences in the extent to which adolescents believed there would be disciplinary consequences from parents resulting from substance use. Boys and girls equally were likely to believe that they would be punished if they used drugs and alcohol. This belief was associated with lower levels of substance use among girls but not among boys. This might be because among boys, disciplinary consequences of substance use were equally likely to be communicated by parents perceived to be both authoritative and nonauthoritative. In contrast, perceived authoritative parenting was linked with girls' perceptions that parents would impose disciplinary consequences should substance use be discovered. It appears that the combination of a supportive yet structured home environment and clear communications to offspring about the consequences of substance use might work together to protect adolescent girls from drug and alcohol use. This finding is similar to that of Steinberg and colleagues (Steinberg et al., 1992) concerning the effects of high parental involvement in schooling for children from authoritative, as compared to authoritarian, homes. High parental involvement in schooling among authoritative parents was associated with increased academic competence, whereas parental involvement in schooling among authoritarian parents was associated with *lower* academic competence. Once again, it appears that it is not just what parents do that matters, but also the milieu in which parenting behaviors are demonstrated.

Of interest is why perceived authoritative parents of girls would be more likely to communicate disciplinary consequences of substance use to their offspring than would perceived authoritative parents of boys. The answer to this inconsistency might lie in differential societal and parental expectations concerning what constitutes acceptable behavior for boys, as compared to girls, and the ways in which adolescents of each gender are parented.

It is well established that adolescent boys are more likely than are adolescent girls to engage in a variety of problem behaviors, including delinquent behavior (McCord, 1990), sexual activity (Katchadourian, 1990; McCord, 1990) and substance use (Hawkins et al., 1997; Sommer, 1984). Parents also might perceive such behaviors by sons as more socially acceptable and developmentally appropriate than are the same behaviors for daughters, because perhaps the negative consequences of some forms of misbehavior (e.g., sexual activity) are perceived to be potentially more serious for girls than for boys (Hill & Lynch, 1983). Given this societal backdrop, perceived authoritative parents of boys might provide an overall environment that is high in provision of behavioral control yet subtly communicate to their sons that “boys will be boys.” In such cases, boys might have known that there would be disciplinary consequences at home if they experimented with drugs and alcohol yet be willing to risk those consequences, knowing that on some level their parents expected to have to impose them.

Alternatively, the findings reported here might be explained by variations in parental attitudes about what it means to parent boys, as compared to girls. Parents might have more intimate relationships with girls than with boys, due to girls’ greater attentiveness to social relationships and intimacy (Gilligan, 1982; McNelles & Connolly, 1999; Sharabany, Gershoni, & Hofman, 1981). Such relationship differences might account for the seemingly incongruous finding that girls were more likely than boys to perceive their parents to be more approving of substance use. Such differences might be reflective of girls’ perceptions that parents are more accepting in general. In the context of such closeness, parents might expect their daughters to be more susceptible to parental influences. Such expectations might result in self-fulfilling prophecies, with perceived authoritative parents of girls anticipating that girls will listen to communications concerning the disciplinary consequences of substance use.

Finally, the relative lack of association between boys’ substance use and parental characteristics might be accounted for by the involvement of boys with peers who vary in their own levels of substance use. Boys are less closely supervised than are girls (Chamberlain & Patterson, 1995) and in the context of such lax supervision are susceptible particularly to antisocial peer influences (Dishion, Patterson, Stoolmiller, & Skinner, 1991). Accordingly, the role of parents in relation to boys’ decisions about whether to use drugs and alcohol might have been diminished by an increased reliance on peer influences on substance use choices. Further research on this topic could focus on the identification of factors (e.g., parental expectations, peer beliefs) that might account for the lack of associations between parental behaviors and boys’ experimentation with drugs and alcohol as well as the attempt to identify additional parental factors that might play a greater role in relation to boys’ substance use choices.

Concerns over adolescent experimentation with drugs and alcohol are widespread in the contemporary United States. Consequently, many parents of adolescents are active in attempting to prevent children from engaging in substance use. This was reflected in the high average scores and low standard deviations for the measures of parental strategies for preventing adolescent substance use and might have accounted for the lack of associations between such strategies and adolescent substance use. However, it does not account for the fact that a measure with an equally high mean and low standard deviation (perceived disciplinary consequences of substance use) emerged as a significant mediator of perceived authoritative/parenting/parental strategies and substance use relations.

There are several possible explanations for the lack of associations between parental strategies to prevent substance use and early adolescent use of drugs and alcohol. The types of strategies included in this measure might not be particularly effective in the social ecology of today’s adolescents. Adolescents today are exposed to multiple sources of information, including television, school health classes, magazines, and billboards,

concerning the dangers of drug and alcohol use. In light of the abundance of information available to young people concerning the dangers of substance abuse, the findings reported here might reflect a ceiling effect—parental behaviors designed to prevent offspring from using drugs and alcohol are unrelated to adolescent substance use, because adolescents are already inundated with information about drug and alcohol use.

According to this rationale, there might be a critical threshold of knowledge about the effects of drug and alcohol use. Once this threshold is reached, additional information about substance use provided by parents might have little effect on adolescents' behaviors. Alternatively, information about substance use provided by parents might be helpful were it to be attended to by adolescents. However, young people might be “tuning out” communications from their parents because of feelings that they are already knowledgeable about the dangers of substance use or because early adolescents are less likely than are older adolescents or adults to experience or observe adverse consequences of experimentation with alcohol and drugs.

Two clear messages emerged from the findings presented in this article. First, there were stronger associations among girls than among boys regarding specific parental efforts to prevent experimentation with drugs and alcohol and early-adolescent substance use. Similar findings have been reported in other research linking parenting practices (parental monitoring) to adolescent substance use (Fletcher, Darling, & Steinberg, 1995). The second message that emerged from this project concerned the nature of the one parenting practice that mediated associations between perceived parental authoritativeness and substance use among adolescent girls. Among adolescents, perceptions of disciplinary consequences represented adolescents' perceptions of what parents would *do* were substance use by their offspring to be discovered. In contrast, perceived parental approval of substance use represented adolescents' perceptions of what parents *believed* about the acceptability of drug and alcohol use. The distinction between anticipated parental actions, as compared to parental beliefs, might be particularly important in explaining associations between parental behaviors and substance use among early adolescent girls.

The current study was not without limitations. Of greatest concern was reliance on reports from adolescents themselves to answer questions concerning (a) perceptions of authoritative parenting, (b) perceptions of parental disciplinary consequences, (c) parental acceptance, and (d) adolescents' own levels of drug and alcohol use. There is no way to access information about adolescents' perceptions of parents, or for that matter adolescents' own levels of drug and alcohol use, other than to ask adolescents themselves to report on those issues. Still, common source variance could account for associations among any of those variables. Were that the case, however, correlations should have existed among all parenting and substance use measures for boys and for girls, rather than the more complicated pattern that emerged. In addition, a purpose for this study was consideration of the role of adolescent perceptions of parental behaviors as mediators of associations between perceived parental authoritativeness and adolescent substance use.

There were also some concerns regarding the inclusion in this project of a measure obtained from parental reports. Those parents who choose to participate in a research project, such as the one reported here, are not representative of the larger group of parents of adolescents in today's society. To name a few differences, parents who participated in this project had telephones and had taken the time to return the school initial consent forms to allow their children to participate in this project. Presumably, they were literate and were likely to be active and involved participants in their children's lives and concerned with identifying ways to keep adolescents from experimenting with drugs and alcohol. As mentioned before, the failure to find effects of the parental strategies measure, in part, might have been due to the restricted variance in this measure.

Questions comprising the measures of perceived authoritative parenting, disciplinary consequences of substance use, and parental acceptance of substance use asked adolescents to report on perceptions of “parents.” Such phrasing ignored likely differences in adolescents' perceptions of the parental characteristics of their mothers, as compared to their fathers. Recent research (Baumrind, 1991; Fletcher, Steinberg, & Sellers, in press) has indicated that in the majority of families (more than 70%) there is interparental consistency in adolescents' perceptions of parental authoritativeness. In such cases, asking adolescents to report about perceptions of

“parents” authoritativeness might not be problematic. Yet, in families in which there is interparental inconsistency in parenting style, it is unclear how adolescents would respond to questions about “parents” authoritativeness. There also is no evidence concerning the extent to which adolescents perceive parents to be consistent in terms of disciplinary consequences imposed for substance use or acceptance of substance use. Requiring adolescents to provide summary judgments concerning parents’ perceived attitudes and actions is clearly problematic. Such problems are magnified further in cases in which family structure deviates from a “traditional” model. For example, when responding to questionnaires, who might adolescents perceive to be their “parents” in cases of parental divorce or when stepparents or parents’ significant others engage in parenting activities?

A second concern regarding use of the term “parents” in measures of adolescents’ perceptions of parental characteristics involved inconsistency in units of measurement across adolescent questionnaire responses, as compared to parental interviews. Adolescents were asked to indicate perceptions of “parents” characteristics. Yet telephone interviews were conducted with only one parent of each adolescent.

Clearly, use of the term *parents* in adolescent questionnaires was problematic in this study, for the reasons presented previously. Unfortunately, this limitation is representative of a research literature that fails to account for interparental differences and their roles in relation to child and adolescent adjustment. For example, adolescents frequently are asked to indicate perceptions of “parents” responsiveness and demandingness (e.g., Lamborn et al., 1991; Steinberg et al., 1994) and parental monitoring (e.g., Rodgers, 1999) or to indicate the frequency with which “people” in their families engage in aggressive acts (e.g., Bahr, Maughan, Marcos, & Li, 1998). There is a need within the adolescent socialization field to improve the precision with which parental behaviors are measured and to investigate the extent to which interparental inconsistencies are related meaningfully to adolescent outcomes. Further research to examine associations between authoritative parenting and early adolescent substance use would benefit from more specific questioning of adolescents concerning which individuals they consider to be “parents” and the behaviors of each of those individuals as well as efforts to conduct parental interviews with those individuals.

This project was limited also by the presence of only two major ethnic groups within the target school. Such a demographic breakdown is relatively typical of the part of the country from which this sample was drawn. Still, this does not eliminate concerns that these findings cannot be generalized to more ethnically diverse groups of adolescents in other areas of the country. Further research efforts could focus on replicating these findings using samples more diverse with respect to age, ethnicity, and geographic location.

Finally, within this report cross-sectional data were used to illuminate the nature of associations between aspects of parenting and adolescent substance use. Without the availability of longitudinal data, it is impossible to demonstrate that relations between parental authoritativeness and adolescent behavior are causally linked. Further research on this topic should include longitudinal data to explicate issues of directionality.

Research to be undertaken also might focus on ways in which societal expectations, parental behaviors, and the influences of important others (e.g., peers) work together in relation to early adolescent substance use. In particular, it will be of interest to determine whether gender differences exist in parents’ expectations for their children’s substance use behavior and to consider the ways in which such expectations operate in concert with the expectations and behaviors of peers.

The findings reported in this article should not be interpreted to indicate that behaviors of parents are inconsequential in determining the extent to which their children, and in particular sons, engage in drug and alcohol use. Instead, this research could indicate that parental actions designed to prevent adolescents from experimenting with drugs and alcohol cannot be understood without also considering children’s more broadly defined home environments and the society in which they are raised. To be effective optimally, parents do need to engage in behaviors aimed at preventing offspring from engaging in substance use. Such behaviors must be

exhibited, however, within a family milieu that is warm and respectful yet sets clear limits for children in an arena of areas much broader than just substance use.

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