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# The Father-Child Relationship, Parenting Styles, and Adolescent Risk Behaviors in Intact Families

Jacinta Bronte-Tinkew

[Kristin A. Moore](#)

[Jennifer Carrano](#)

*Child Trends, Washington, D.C.*

The father-child relationship and father's parenting style are examined as predictors of first delinquency and substance use, using data from the National Longitudinal Study of Youth 1997, Rounds 1 to 3 ( $N = 5,345$ ), among adolescents in intact families. Discrete time logistic regressions indicate that a more positive father-child relationship predicts a reduced risk of engagement in multiple first risky behaviors. Having a father with an authoritarian parenting style is associated with an increased risk of engaging in delinquent activity and substance use. Two-way interaction models further indicate that the negative effect of authoritarian parenting is reduced when fathers have a positive relationship with their adolescent. Permissive parenting also predicts less risky behavior when the father-child relationship is positive. The positive influence of the father-child relationship on risk behaviors is stronger for male than for female adolescents.

**Keywords:** *adolescents; behaviors; father-child relationship; parenting; risk taking*

Fathers have come to be recognized as important contributors to the social, emotional, and cognitive development of their children (Marsiglio, Amato, Day, & Lamb, 2000; Palkovitz, 1997; Zimmerman, Salem, & Maton, 1995). However, few studies have examined how the father-child relationship and paternal parenting styles are associated with

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adolescent outcomes. Research on the father-child relationship among adolescents is slowly emerging, but much still needs to be learned to determine how the quality of the father-child relationship and fathers' parenting styles influence outcomes for this age group (Lamb, 1997; Larson & Richards, 1994; Zimmerman et al., 1995).

This study has three objectives: (a) to examine the influence of the father-child relationship and fathers' parenting style on adolescents' risk of first risky behaviors (delinquency and substance use), (b) to examine whether fathers make a unique contribution to adolescents' risk behavior above and beyond that of mothers', through their relationships with children and their parenting styles, and (c) to examine whether the father-child relationship and parenting styles interact to predict adolescents' risk of first delinquency and substance use.

This study builds on past research and extends knowledge regarding fatherhood in several ways. First, we use a nationally representative sample of adolescents, specifically the National Longitudinal Study of Youth 1997 (NLSY97), 1997 to 1999 cohort. Second, using identical measures for fathers and mothers, we compare the independent effects of the mother-child and father-child relationship and parenting styles on adolescents. We separate out the effects of paternal involvement from the effects of maternal involvement to understand whether and how fathers influence adolescents, given that the behavior of mothers and fathers may be correlated. Few studies of the father-child relationship have controlled for variations in the level of supportive maternal involvement.

Third, we examine whether the father-child relationship interacts with the father's parenting style to affect risky behaviors, net of other individual-, family-, and contextual-level factors. These analyses explore the possibility that parenting is more or only effective in the presence of a positive parent-child relationship. Fourth, we adopt a life course approach and use longitudinal data to examine how changes in the father-child relationship over time are associated with adolescent's first transition into risk behaviors. Most fatherhood research has used cross-sectional data, and the direction of association between the father-child relationship and adolescent outcomes has been unclear. Finally, we use adolescent report data, rather than parent report data, on the parent-child relationship. Considering the growing awareness of the importance of fathers in children's lives, it is important to clarify how fathers' involvement and parenting styles affect adolescents because adolescence is a period of high levels of risk taking (Child Trends, 2002).

## Literature Review

Studies suggest that positive parent-child relationships, age-appropriate monitoring of children's activities, and warm and supportive disciplinary strategies are important predictors of adolescent social, emotional, and cognitive development (see [Cox & Harter, 2003](#), for a review). However, until recently, the majority of studies on parenting have focused on the effects of mothers on their children's lives, leaving a dearth of information on the effects of fathers ([Lamb, 1997](#); [Parke, 2000](#)). Furthermore, the studies that have highlighted the importance of the father-child relationship for children's development have tended to examine outcomes for younger children ([Grossman, Pollack, & Golding, 1998](#); [Lamb, 1997, 2000](#); [Palkovitz, 1997](#); [Pleck, 1997](#)).

Paternal involvement in children's lives is considered critical for promoting positive child outcomes (see [Marsiglio et al., 2000](#), for review). Findings have particularly emphasized the father-child relationship as an influence on child well-being ([Lamb, 1997](#); [Palkovitz, 1997](#); [Parke, 2000](#); [Pleck, 1997](#)). Although the mere presence of a father is important for economic and social reasons, available research has demonstrated that in intact father-present families, the quality of father involvement is more clearly linked to positive outcomes than is the quantity of involvement ([Parke, 1996](#)). Studies have also begun to explore the link between outcomes and various dimensions of paternal behavior, such as spending time with children, providing emotional support, giving everyday assistance, monitoring children's behavior, and using noncoercive discipline (see [Marsiglio et al., 2000](#), for review).

A more positive father-child relationship has been found to contribute significantly to the emotional and intellectual well-being of children ([Lamb, 1997](#); [Maccoby & Martin, 1983](#)). These influences tend to be similar for various racial groups ([Amato & Rivera, 1999](#)). Children with supportive paternal influences tend to report fewer behavioral problems at school ([Browne & Rife, 1991](#)) and greater social integration ([Amato & Booth, 1997](#)). Similarly, previous research has found that paternal warmth is positively associated with indicators of subsequent well-being for adolescents, such as marital success and supportive social networks ([Franz, McClelland, & Weinberger, 1991](#)).

Although paternal and maternal behaviors are expected to be correlated, unfortunately few studies of fathers have controlled for the effects of maternal behavior. Studies with controls have found significant associations between positive paternal behavior and positive child outcomes ([Harris, Furstenberg, & Marmer, 1998](#); [Marsiglio et al., 2000](#)). Zimmerman and colleagues (1995) have found, for example, that the amount of time adolescents

spend with fathers and paternal emotional support are both associated with higher self-esteem, higher life satisfaction, and less delinquency for African American, urban, adolescent boys.

Some studies have found the influence of father involvement on outcomes differs for male and female adolescents. Research on two-parent families suggests that fathers are more involved with sons than with daughters (Harris & Morgan, 1991) and that boys report closer relationships to their fathers than do girls (Youniss & Smollar, 1985). It is likely that fathers may engage in certain activities such as sports more often with their sons than with their daughters but may not necessarily differ in other activities, such as how often they attend church with them. Boys during adolescence may look to their fathers rather than their mothers for guidance (Richardson, Galambos, Schulenberg, & Petersen, 1984). Several studies have suggested that fathers play a stronger role in sons' rather than daughters' development (Lamb, 1997; Snyder, Velasquez, Clark, & Means-Christensen, 1997). Recent research suggests that fathers may also be more influential for boys than girls in the domain of intimacy and the development of marital attitudes during adolescence (Risch, Jodl, & Eccles, 2004). In addition, the family processes associated with problem behaviors differ by gender, and boys are at greater risk than are girls for externalizing behaviors and conduct problems (Loeber & Hay, 1997). Because the father-child relationship and family processes may vary by gender, we expect that the adolescent's gender may interact with the father-child relationship to influence risky behaviors. Although the quality of the father-child relationship is important, paternal parenting styles are also important. However, most prior research done on fathers' parenting styles has relied on maternal reports as a proxy. As a group, these studies have found that authoritative parenting, one of several prototypic styles of parenting identified in the seminal works of Diana Baumrind (1967, 1971), is the parenting style most often associated with positive adolescent outcomes (Baumrind, 1989; Maccoby & Martin, 1983). Authoritative parenting includes parental acceptance, inductive and nonpunitive discipline, and consistency in child rearing.

Baumrind's conceptualization of parenting styles captures two important elements of parenting: parental responsiveness (also referred to as parental warmth or supportiveness) and parental demandingness (also referred to as behavioral control) (Baumrind, 1991; Maccoby & Martin, 1983). Categorizing parents according to whether they are high or low on parental demandingness and responsiveness creates a typology of four parenting styles: indulgent, authoritarian, authoritative, and uninvolved (Maccoby & Martin, 1983). Each of these parenting styles reflects different naturally occurring patterns of parental values, practices, and behaviors (Baumrind, 1991) and a

distinct balance of responsiveness and demandingness. Indulgent parents (also referred to as permissive or nondirective) are more responsive than demanding. Authoritarian parents are highly demanding and directive but not responsive. Authoritative parents are both demanding and responsive, and uninvolved parents are low in both responsiveness and demandingness.

A growing number of research studies have found that parenting styles (mostly reported by mothers) predict child well-being in the domains of social competence, academic performance, psychosocial development, and problem behaviors (Conger, Conger, & Elder, 1997; McLloyd & Wilson, 1992). Previous research consistently finds that children whose parents are authoritative rate themselves, and are rated by objective measures, as more socially and instrumentally competent than do those whose parents are nonauthoritative (Baumrind, 1991; Miller, Cowan, Cowan, & Hetherington, 1993; Weiss & Schwartz, 1996). On the other hand, children whose parents are uninvolved perform most poorly in all domains. The benefits of authoritative parenting and the detrimental effects of uninvolved parenting are evident as early as the preschool years and continue into early adulthood (Baumrind, 1991).

In sum, despite the breadth and consistency of findings regarding parent-child relationships and parenting styles, most empirical studies have relied on mothers' reports of parenting styles and have ignored paternal parenting styles. Few studies have examined adolescent outcomes, especially with longitudinal, adolescent-report data. Moreover, a possible interaction between paternal parenting styles and the father-child relationship has also been ignored. In addition, studies have not controlled for the mother-child relationship. Our empirical examination addresses these gaps in the literature.

## Research Questions and Hypotheses

Based on our review of the literature, we address the following primary research questions:

*Research Question 1:* Net of individual-, household-, and contextual-level factors, does the father-child relationship influence the risk of first delinquency and substance use among adolescents above and beyond the mother-child relationship?

*Hypothesis:* A more positive father-child relationship will be related to a reduced risk of delinquent behavior and substance use among adolescents.

*Research Question 2:* Net of individual-, household-, and contextual-level factors, do fathers' parenting styles influence the risk of first delinquency and substance use among adolescents above and beyond mothers' parenting styles?

*Hypothesis:* Adolescents with fathers with an authoritative parenting style will have a reduced risk of involvement in first delinquent activity and substance use.

*Research Question 3:* Net of individual-, household-, and contextual-level factors, does the father-child relationship interact with fathers' parenting styles to predict the risk of first delinquent behaviors and substance use among adolescents?

*Hypothesis:* The association between the father-child relationship and the risk of first substance use or delinquency will vary by father's parenting style.

*Research Question 4:* Net of individual-, household-, and contextual-level factors, does the father-child relationship interact with adolescent gender to predict the risk of first delinquent behaviors and substance use among adolescents?

*Hypothesis:* The association between the father-child relationship and the risk of first substance use or delinquency will be stronger for boys than for girls.

## Data and Method

### Data

These analyses use data from the NLSY97, a nationally representative survey created to document the transition from adolescence into adulthood. For the present study, we use data from three rounds of the survey collected in 1997, 1998, and 1999. The 1997 to 1999 merged parent-child data include annual father-specific demographic information and child-specific information. One of the strengths of the NLSY97 is that it is a multitopic survey that taps many dimensions of household well-being and contains many family process measures. The survey also consists of a fairly large sample of adolescents, which allows us to create data files for specific populations of adolescents, and is also longitudinal, which makes it possible to track and measure adolescents' outcomes over time. In the initial wave of the study, both the parent (usually the mother) and the child were interviewed, and we use data obtained from both parent and adolescent reports. In Round 1 of the survey, data were collected for 8,984 adolescents, in Round 2 for 8,386 adolescents, and in Round 3 for 8,209 adolescents.

### Sample

Our analytical sample is restricted to 5,345 adolescents who lived continuously with two parents (both biological and nonbiological parents) during all three waves of the study. In all, 33 cases were lost to sample attrition between Round 1 and Round 3 in the two-parent sample, and 56 cases who had risky behavior before the time of the first interview are excluded from these models (left truncation). We exclude these cases to avoid concerns about causal ordering, specifically that paternal interaction and parenting

style represent a response to risk taking rather than an antecedent. Only residential parents (fathers and mothers) are considered in the analysis. The oldest adolescent in the sample was age 18 at the time of observation. Because our sample contains families that remained intact for at least 3 years of observation, these families differ from nonintact families and therefore are not representative of all families in the United States but only of intact two-parent families. In addition, given the teens live in intact families, our sample may underrepresent teens likely to engage in risky behaviors.

### **Dependent Variables**

*Delinquent activity.* We examine adolescents' first transition to each of 10 delinquent behaviors. Adolescents were asked in the 1997, 1998, and 1999 interviews whether they had ever carried a hand gun; belonged to a gang; purposely damaged or destroyed property; stolen something from a store; stolen something from a person or house; run away; committed other property crimes such as fencing, receiving, possessing, or selling stolen property; attacked someone with the idea of seriously hurting him or her; sold or helped sell marijuana (pot, grass), hashish (hash), or other hard drugs; or been arrested by the police or taken into custody for illegal or delinquent offense. These acts of delinquency have been found to be associated with measures of substance use and other behavioral problems, but the association is moderate in magnitude, indicating that the delinquency and substance use measures are not assessing the same behaviors or events (Moore, McGroder, Hair, & Gunnoe, 1999). These measures are dummy coded, with 0 (never involved in the delinquent act) and 1 (ever involved in the delinquent act).

*Substance use.* We also examine adolescents' first transition to three acts of substance use. Adolescents reported whether they had done any of the following in the 1997, 1998, and 1999 interview: smoked a cigarette, had a drink of an alcoholic beverage, or used marijuana. This measure is also dummy coded, with 0 (not involved in substance use) and 1 (involved in substance use).<sup>1</sup>

### **Independent Variables**

*The father-child relationship.* Father-child relationship is a time-varying covariate operationalized by a youth-reported, four-item scale measuring the closeness and supportiveness between the adolescent and the residential father. This measure represents both the quality and quantity of the relationship between the adolescent and the father by capturing both the emotional and the behavioral dimensions of involvement. The emotional dimension is



measured with two items asked of the adolescent about the father: "He is a person I want to be like" and "I really enjoy spending time with him." The behavioral dimension measures supportive types of paternal communication and interaction with two items: "How often does he praise you for doing well?" and "How often does he help you do things that are important to you?" The responses to these questions are scored on a 5-point, Likert-type scale ranging from 0 (*never*) to 4 (*always*). The scores of the scale are summed, resulting in values ranging from 0 to 16, with higher scores indicating a more positive father-child relationship. The alpha coefficient of reliability for the scale with all four items is .85 for fathers and .74 when using teens' reports of mothers. Construct validity on this measure is determined to be high, and an analysis of predictive validity on this measure also found that higher levels of the father-child relationship are related to fewer adolescent behavior problems in 1997 ([Hair et al., 2003](#)).

*Parenting styles.*<sup>2</sup> To approximate the four parenting styles developed by [Maccoby and Martin \(1983\)](#), we combined two global dimensions of parenting: demandingness (e.g., strictness) and responsiveness (e.g., warmth, support). We use two items asked of adolescents regarding whether the parent "in general is very supportive, somewhat supportive, or not very supportive" and is "permissive or strict about making sure you did what you were supposed to do."

Responses of "not very supportive" or "somewhat supportive" on the supportiveness item were recoded 0 and are considered nonresponsive, and responses of "very supportive" were recoded 1 and are considered responsive. Responses of "strict" on the permissive or strictness item were recoded 1 and are considered demanding, and responses of "permissive" were recoded 0 and are considered nondemanding. The 2 two-level variables are combined to produce a parenting style variable with four categories: uninvolved (permissive and not very or somewhat supportive), authoritarian (strict and not very or somewhat supportive), permissive (permissive and very supportive), and authoritative (strict and very supportive). Although brief, these items were asked in every year, and both construct and predictive validity have been found to be good for these parenting styles ([Moore et al., 1999](#)).

*Parental monitoring and awareness.* The time-varying measure of parental awareness and monitoring of adolescents was asked about both mothers and fathers in the 1997, 1998, and 1999 interviews. Respondents used a 5-point, Likert-type scale ranging from 0 (*knows nothing*) to 4 (*knows everything*) to indicate how much their parents' knew about close friends, close

friends' parents, who teens were with when they were not at home, and who teens' teachers were and what they were doing in school. Responses to the four questions were summed, resulting in a continuous scale ranging from 0 to 16. The alpha coefficient of reliability for the index was .71 for mothers and .81 for fathers. An analysis of predictive validity for this index found that both mothers and fathers who were rated high on monitoring were also rated as more strict and had adolescents with fewer behavioral problems (Moore et al., 1999).

*Fathers' individual characteristics.* We capture the employment status of the father with a dummy variable differentiating the unemployed and the employed (reference category). We also control for the father's educational attainment, dummy coded as less than high school, high school, and some college and higher (reference category).

*The mother-child relationship and other individual characteristics.* We include measures of the mother-child relationship and mother-specific covariates as control variables. Mother-specific measures include a time-varying covariate of maternal monitoring and maternal parenting styles (identical to the variables described above for fathers). We also include a construct for the mother's educational attainment, coded with the three categories used for fathers.

*Mother-father relationship.* To control for any confounding effect of the relationships between the parents on adolescent outcomes, we include a time-varying covariate of the parent-spouse relationship quality. This index is composed of six items asked of residential parents regarding whether the spouse is fair and willing to compromise when there is a disagreement, screams or yells when angry, insults or criticizes ideas, expresses affection or love, encourages or helps do things that are important, and blames spouse for problems. The item responses range from 0 (*never*) to 4 (*always*). The summative scale has a range from 0 to 24. Higher scores indicate a more positive marital relationship, and the alpha coefficient of reliability for the scale is .83 (residential mother's report of support from the residential father).

*Household-level covariates.* As a proxy for poverty level, we include a dummy variable for whether or not the household received Aid to Families with Dependent Children (AFDC) in the 1st year of the study. We also include household composition, measured by the number of coresident children younger than 18 years old in the household. This measure is time-constant and entered as a continuous variable in the analysis.

*Child-level covariates.* Age at interview, a time-varying indicator that captures the duration dependence of the estimated hazard of a first risk behavior, is measured in years. We also include dummy variables that identify the ethnic origin of adolescents: non-Hispanic White (reference category); African American; American Indian, American Eskimo, or Aleut; Asian or Pacific Islander; and Hispanic.

*Time.* Trends in the risk of first substance use and delinquent activity between 1997 and 1999 are captured by including a continuous variable for year of observation. Largely because respondents can “age into” the sample at any year, a respondent’s age and the year of observation are not linear functions of one another, and thus the effects of both can be estimated. Table 1 summarizes the operationalization of all variables used in the analyses.

### Analytic Strategy

The analysis models the effects of the explanatory variables on the timing of first substance use and first delinquent activity using a discrete time event history analysis (Allison, 1984; Yamaguchi, 1991). In these models, each respondent’s experience is segmented into a series of person-year observations. Each person-year is defined as the period between successive annual interviews. The dependent variables are binary variables that indicate whether a first act of substance use or delinquent activity occurred during the interval. The independent and control variables measure characteristics of fathers, family context, and other sociodemographic characteristics at the beginning of the interval.

A discrete time model is chosen for several reasons. First, these models allow us to examine how the risk of experiencing an event changes with age. Second, they easily incorporate time-varying explanatory variables with values that change over time (Allison & Waterman, 2002). Third, this method is useful in the analysis of nonrepeatable events, such as our outcomes of first substance use and first delinquent activity. It is important to study adolescents’ first risky behaviors because previous research suggests that once adolescents transition to risky behavior, they are at risk of persistent delinquency during the life course (Moffitt, 1993).

These models solve the truncation problem by allowing the risk period for individuals to begin with age at first interview (Guo, Chung, & Hill, 2002). Discrete time hazard models of this type can be estimated using logistic regression techniques. Individuals enter the risk set at the time of their first interview and contribute exposure to the risk of a risky behavior until they

*(text continues on p. 863)*

**Table 1**  
**Descriptive Statistics of Variables Used in the Analysis, Intact Families**  
**in the National Longitudinal Study of Youth 1997, 1997 to 1999**

Variable	<i>M</i> or Frequency	<i>SD</i>	Description
Parent-child relationship			
Father-child relationship	11.12	13.62	Four-item scale. Score range: 0-16.
Mother-child relationship	11.79	3.06	Four-item scale. Score range: 0-16.
Parental monitoring			
Father	7.78	3.95	Four-item scale. Score range: 0-16.
Mother	10.01	3.25	Four-item scale. Score range: 0-16.
Parenting style			
Father's parenting style			
Permissive	26.35%	0.36	Father is permissive (1 = yes)
Authoritarian	23.92%	0.34	Father is authoritarian (1 = yes)
Authoritative	26.50%	0.40	Father is authoritative (1 = yes)
Uninvolved	22.85%	0.31	Father is uninvolved (1 = yes)
Mother's parenting style			
Permissive	26.08%	0.43	Mother is permissive (1 = yes)
Authoritarian	23.68%	0.34	Mother is authoritarian (1 = yes)
Authoritative	30.05%	0.45	Mother is authoritative (1 = yes)
Uninvolved	20.26%	0.34	Mother is uninvolved (1 = yes)
Biological status			
Nonbiological father	37.40%	0.34	Father is nonbiological father (1 = yes)
Biological father	62.60%	0.48	Father is biological father (1 = yes)
Parental education			
Father's education			
Less than high school (HS)	58.20%	0.49	Father did not achieve HS degree (1 = yes)

HS	24.40%	0.42	Father completed HS (1 = yes)
Some college and higher	17.20%	0.28	Father achieved some college, higher (1 = yes)
Mother's education			
Less than HS	0.54	0.50	Mother did not achieve HS degree (1 = yes)
HS	0.31	0.46	Mother completed HS (1 = yes)
Some college and higher	0.08	0.27	Mother achieved some college, higher (1 = yes)
Employment			
Father employed	64.10%	0.48	Father employed (1 = yes)
Father not employed	35.90%	0.36	Father not employed (1 = yes)
Family context			
Marital relationship	18.35	0.44	Six-item scale. Score range: 0-24.
No. of coresident children in home	2.62	1.25	Coresident children younger than 18 in the home
Parents married	75.40%	0.43	Parents married (1 = yes)
Parents not married	24.60%	0.21	Parents not married (1 = yes)
Received Aid to Families with			
Dependent Children (AFDC)	9.30%	0.29	Household received AFDC at Time <i>t</i>
Did not receive AFDC	91.70%	0.45	Household did not receive AFDC at Time <i>t</i>
Child characteristics			
Gender			
Male	0.52	0.50	Respondent is male (1 = yes)
Female	0.48	0.50	Respondent is female (1 = yes)
Race			
African American	24.70%	0.43	Respondent is African American (1 = yes)
White (non-Hispanic)	60.50%	0.48	Respondent is White (1 = yes)
American Indian, Eskimo, or Aleut	0.70%	0.08	Respondent is American Indian, Eskimo, or Aleut (1 = yes)
Asian or Pacific Islander	1.80%	0.13	Respondent is Asian or Pacific Islander (1 = yes)
Hispanic	11.60%	0.32	Respondent is Hispanic (1 = yes)
Age	15.25	1.09	Child's age in years at Time <i>t</i>

(continued)

Table 1 (continued)

Variable	<i>M</i> or Frequency	<i>SD</i>	Description
Adolescent outcomes			
Delinquency			
Carried a hand gun	6.00	0.06	First act between Time <i>t</i> and <i>t</i> +1
Belonged to a gang	2.91	0.09	First act between Time <i>t</i> and <i>t</i> +1
Damaged or destroyed property	9.60	0.09	First act between Time <i>t</i> and <i>t</i> +1
Stole from store	9.50	0.09	First act between Time <i>t</i> and <i>t</i> +1
Stole from person or house	8.60	0.06	First act between Time <i>t</i> and <i>t</i> +1
Run away	3.60	0.36	First act between Time <i>t</i> and <i>t</i> +1
Committed property crimes	4.60	0.04	First act between Time <i>t</i> and <i>t</i> +1
Attacked someone to hurt him or her	11.10	0.11	First act between Time <i>t</i> and <i>t</i> +1
Sold or helped sell marijuana or hard drugs	6.30	0.06	First act between Time <i>t</i> and <i>t</i> +1
Been arrested or taken into custody	6.20	0.06	First act between Time <i>t</i> and <i>t</i> +1
Substance use			
Smoked a cigarette	38.80	0.34	First smoked between Time <i>t</i> and <i>t</i> +1
Had a drink of alcohol	50.60	0.49	First drink between Time <i>t</i> and <i>t</i> +1
Used marijuana	22.10	0.22	First used between Time <i>t</i> and <i>t</i> +1
Year	1998.58	1.01	Observation year at Time <i>t</i>
Number of person-years (delinquency)	8,362		
Number of person-years (substance use)	7,566		
<i>N</i>	5,345		

commit such a behavior or they are censored by the terminal interview conducted in 1999. Once having experienced a risky behavior, the respondent is no longer exposed to that risk and is no longer observed (Wu, 1996). In addition, respondents who leave the panel before experiencing a risky behavior are censored at the time of attrition. The results in this study are interpreted in terms of odds ratios. For categorical variables, an odds ratio greater than 1 indicates an increased chance of an outcome occurring; those less than 1 signify a decreased chance of an outcome occurring. An odds ratio of 1 means that the variable has no effect. For continuous variables such as scales, the odds ratio measures the change in the dependent variable per unit change in the variable. In such cases, we calculate the percentage change,  $100(e^B - 1)$ , in the odds for each 1 unit increase in the independent variable (Allison, 2001).

In each model (i.e., for each outcome examined), the standard errors of the logistic coefficients predicting adolescent initiation into risky behaviors are adjusted using a Huber correction in SAS statistical software for the effects of cluster sampling. The possible presence of more than one child per family in the sample violates the assumption that each observation is obtained from its own cluster. This would have led to a substantial underestimate of the variance of the estimated coefficients. The Huber procedure corrects for the likelihood of children being interrelated within groups. It corrects for the requirement that the errors are homoscedastic and that observations follow the assumed distribution. As a validity check, the models are run with one child randomly selected per family. These results differ very little from the models with the Huber correction and all children present in the family, which suggests that the findings are robust. Models are built using hierarchical regression. First, each event of interest is modeled using the father-child relationship as the primary predictor. Second, the effects of parenting styles, mother-child relationships, and other family- and household-level characteristics are tested independently of other variables. Third, variables included to test alternative hypotheses, including child characteristics and other household characteristics, are added to the models to measure their effects on child outcomes and the size and statistical significance of the father-child relationship coefficients.

We also add two-way interaction terms to the main effect models. Log likelihood tests between the models of direct effect and interaction models are conducted to determine whether the addition of interaction terms significantly increases predictive power while controlling for other variables. The log likelihood statistics,  $c = -2(\log L_0 - L_1)$ , test the hypothesis that all coefficients except the intercept are 0.

## Results

### Descriptive Statistics

Table 1 presents descriptive statistics for all variables in the analysis. These statistics are based on the complete person-year file and thus represent the typical values of the variables averaged over person-years of exposure to risk of first substance use or first delinquent activity. With respect to delinquent activity, the data indicate that during the 3-year period, 6.0% of adolescents in the sample first carried a hand gun, 2.9% first belonged to a gang, 9.6% first damaged or destroyed property, 9.5% first stole from a store, 8.6% first stole from a person or house, 3.6% first ran away, 4.6% first committed property crimes, 11.1% first attacked someone to hurt him or her, 6.3% first sold or helped sell marijuana, and 6.2% first were arrested or taken into custody. With respect to substance use, the data indicate that 38.8% first smoked a cigarette, 50.6% first had a drink of alcohol, and 22.1% first used marijuana during the 3-year period. These adolescents are on average between 15 and 16 years old at the time of observation, and 52% of these adolescents are male. The largest percentage of adolescents are White non-Hispanics (60.5%), followed by African Americans (24.7%), and Hispanics (11.6%).

### Differentials in the Father-Child and Mother-Child Relationship

Table 2 shows the means and standard deviations for each of the family process measures and parent-child relationship scales, for both mothers and fathers. Results indicate that the father-child relationship and mother-child relationship decline as adolescents get older. The mean of the father-child relationship in 1997 is 11.44, and this decreases significantly with age, to 10.87 by 1999. The mean of the mother-child relationship in 1997 is 12.07, and this decreases significantly to 11.61 by 1999. On average, scores on the parent-child relationship measure are significantly higher for mothers than for fathers at each time point and on overall scores (11.79 for mothers and 11.12 for father), although both mothers and fathers have quite high-quality relationships with their children. Table 2 shows that levels of parental monitoring or awareness for both mothers and fathers also decrease as children get older. The parental monitoring or awareness mean for fathers decreases significantly from 8.19 in 1997 to 7.35 by 1999. Similarly, for mothers, the parental monitoring or awareness mean decreases from 10.30 in 1997 to 9.71 in 1999. On average and at each time point, mothers have significantly higher



**Table 2**  
**Means and Standard Deviations of Parent-Child Relationship**  
**Measures: Residential Parents in the National Longitudinal Study**  
**of Youth 1997, 1997 to 1999**

Measure of Parental Involvement	Fathers		Mothers	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Parent-child relationship				
1997 measure	11.44 <sup>a</sup>	3.48	12.07	2.94
1998 measure	10.97 <sup>a</sup>	3.65	11.65	3.05
1999 measure	10.87 <sup>a</sup>	3.74	11.61	3.18
Overall parent-child relationship index	11.12	3.62	11.79	3.06
Parental monitoring				
1997 measure	8.19 <sup>a</sup>	3.92	10.30	3.20
1998 measure	7.67 <sup>a</sup>	3.93	9.95	3.18
1999 measure	7.35 <sup>a</sup>	3.93	9.71	3.33
Overall parental monitoring index	7.77	3.94	10.10	3.24
<i>N</i>			5,345	

a. Significantly different for mothers and fathers at each time point at the level of  $p < .001$ .

parental monitoring scores than do fathers (10.10 vs. 7.77, on average). However, adolescents report relatively high parental monitoring for both parents. In sum, the overall picture in Table 2 shows that although parent or adolescent relationships are generally positive, fathers in intact families have less positive parent-child relationships and lower levels of monitoring with adolescents than do mothers.

## Multivariate Analysis

*Research Questions 1 and 2:* Net of individual-, household-, and contextual-level factors, does the father-child relationship influence the risk of first delinquency and substance use among adolescents, above and beyond the mother-child relationship? Do fathers' parenting styles influence the risk of first delinquency and substance use among adolescents, above and beyond mothers' parenting styles?

Table 3 presents the results of the baseline event history logistic regression analysis for the risk of three substance use acts and 10 delinquent behaviors. This equation estimates the additive effects of the explanatory variables on the estimated hazard of first substance use and first delinquent activity. The findings accord with the hypotheses derived from theory and prior research.

(text continues on p. 869)

**Table 3**  
**Odds Ratios and Huber Corrected Standard Errors for Baseline Logistic Regression Analysis**  
**of the Effects of the Father-Child Relationship on Adolescents' First Delinquent Activity,**  
**National Longitudinal Study of Youth 1997, 1997 to 1999**

Variable	Arrested		Sold Drugs		Attacked Someone		Carried a Hand Gun		Belonged to a Gang		Damaged or Destroyed Property		Stole From Store		Stole From Person House		Run Away		Receiving, Possessing, or Selling Stolen Property		
	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE	
Parent-child relationship																					
Father-child relationship	0.98**	0.008	0.99**	0.008	0.97**	0.008	0.98**	0.008	0.97**	0.008	0.96**	0.008	0.99***	0.008	0.95**	0.008	0.98**	0.008	0.94***	0.008	
Mother-child relationship	0.96***	0.008	0.99***	0.008	0.99***	0.008	0.96***	0.008	0.98***	0.008	0.95***	0.008	0.97***	0.008	0.95***	0.008	0.97***	0.008	0.97***	0.009	
Parental monitoring																					
Father	0.97***	0.008	0.99***	0.008	0.98***	0.008	0.97***	0.008	0.95***	0.008	0.96***	0.008	0.98***	0.008	0.96***	0.008	0.97***	0.008	0.98***	0.008	
Mother	0.95***	0.009	0.96***	0.009	0.98***	0.009	0.97***	0.009	0.95***	0.009	0.94***	0.009	0.93***	0.009	0.92***	0.009	0.99***	0.009	0.96***	0.007	
Parenting style																					
Father's parenting style																					
(Authoritative)																					
Uninvolved	1.06	0.066	1.05	0.066	1.05	0.066	1.05	0.066	1.07	0.066	1.05	0.066	1.06	0.066	1.05	0.066	1.05	0.066	1.05	0.066	1.05
Permissive	1.00	0.060	0.99	0.060	0.99	0.060	0.99	0.060	0.99	0.060	0.99	0.060	0.99	0.060	0.99	0.060	1.00	0.060	1.00	0.059	
Authoritarian	1.16†	0.059	1.21*	0.059	1.17**	0.059	1.16*	0.059	1.20*	0.059	1.21*	0.059	1.17	0.059	1.17*	0.059	1.16*	0.059	1.16*	0.059	
Mother's parenting style																					
(Authoritative)																					
Uninvolved	1.18*	0.067	1.19*	0.067	1.19*	0.067	1.18*	0.067	1.19*	0.067	1.19*	0.067	1.19*	0.067	1.19*	0.067	1.18*	0.067	1.25*	0.067	
Permissive	1.08†	0.055	1.11†	0.055	1.14†	0.055	1.10†	0.055	1.11†	0.055	1.16†	0.055	1.17†	0.055	1.11†	0.055	1.11†	0.055	1.11†	0.055	
Authoritarian	1.14†	0.064	1.13†	0.064	1.11†	0.064	1.13†	0.064	1.15†	0.064	1.14†	0.064	1.14†	0.064	1.17†	0.064	1.13†	0.064	1.14†	0.064	

Biological status (Biological father)	1.09	0.050	1.08	0.050	1.08	0.050	1.09	0.050	1.09	0.050	1.11	0.050	1.08	0.050
Parental education														
Father														
(College plus)														
Less than high school	1.06	0.075	1.05	0.075	1.05	0.075	1.06	0.075	1.06	0.075	1.05	0.075	1.05	0.075
High school	0.99	0.074	0.99	0.074	0.99	0.074	0.98	0.074	0.99	0.074	0.99	0.074	1.00	0.071
Some college	1.05	0.093	1.05	0.093	1.04	0.093	1.04	0.093	1.05	0.093	1.04	0.093	1.04	0.093
Mother														
(College plus)														
Less than high school	1.05	0.083	1.05	0.083	1.04	0.083	1.05	0.083	1.05	0.083	1.04	0.083	1.05	0.081
High school	0.99	0.079	0.99	0.079	0.98	0.079	0.99	0.079	0.99	0.079	0.98	0.079	0.99	0.079
Some college	1.11	0.094	1.12	0.094	1.11	0.094	1.12	0.094	1.12	0.094	1.19	0.094	1.12	0.094
Employment														
(Father employed)														
Father not employed	1.02	0.044	1.02	0.044	1.01	0.044	1.02	0.044	1.01	0.044	1.02	0.044	1.01	0.044
Mother-father relationship	0.99**	0.000	0.98**	0.000	0.96**	0.000	0.99**	0.000	0.99**	0.000	0.93**	0.000	0.94**	0.000
Family context														
Number of children Received Aid	1.00	0.020	1.00	0.020	1.00	0.020	1.00	0.020	1.00	0.020	1.00	0.020	1.00	0.020
to Families with Dependent Children	1.11*	0.045	1.16*	0.045	1.11*	0.045	1.17*	0.045	1.13*	0.045	1.16*	0.045	1.19*	0.045
Child characteristics														
Race														
(Non-Hispanic White)														
African American	0.96	0.056	0.95	0.056	0.95	0.056	0.96	0.056	0.96	0.056	0.95	0.056	0.95	0.056
American Indian, Eskimo, or Aleut	1.00	0.250	1.00	0.241	1.01	0.250	1.01	0.250	1.00	0.250	1.00	0.250	1.00	0.250
Asian or Pacific Islander	0.68**	0.141	0.65**	0.143	0.67**	0.143	0.68**	0.143	0.68**	0.143	0.67**	0.143	0.67**	0.143
Hispanic	1.05	0.062	1.05	0.062	1.05	0.062	1.06	0.062	1.06	0.062	1.05	0.062	1.06	0.062

(continued)

Table 3 (continued)

Variable	Arrested		Sold Drugs		Attacked Someone		Carried a Hand Gun		Belonged to a Gang		Damaged or Destroyed Property		Stole From Store		Stole From Person House		Run Away		Receiving, Possessing, or Selling Stolen Property		
	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE	
School enrollment status																					
Enrolled in school	1.82	0.673	1.82	0.673	1.83	0.673	1.82	0.673	1.82	0.673	1.83	0.673	1.83	0.673	1.83	0.673	1.82	0.673	1.83	0.673	
Gender																					
(Female)																					
Male	1.76***	0.042	1.75***	0.040	1.74***	0.040	1.71***	0.041	1.74***	0.041	1.75***	0.041	1.73***	0.041	1.78***	0.041	1.76***	0.041	1.78***	0.041	
Age	1.14*	0.055	1.24*	0.054	1.24*	0.054	1.14*	0.055	1.17*	0.055	1.18*	0.055	1.15*	0.055	1.16*	0.055	1.21*	0.055	1.14*	0.055	
Year	1.57***	0.029	1.67***	0.029	1.59***	0.029	1.57***	0.029	1.55***	0.029	1.58***	0.029	1.59***	0.029	1.58***	0.029	1.57***	0.029	1.58***	0.029	
Log likelihood ( <i>df</i> )	9,521 (26)		9,521 (26)		9,521 (26)		9,521 (26)		9,521 (26)		9,521 (26)		9,521 (26)		9,521 (26)		9,521 (26)		9,521 (26)		
Number of person-year observations	7,566		7,566		7,566		7,566		7,566		7,566		7,566		7,566		7,566		7,566		
<i>N</i>	5,345		5,345		5,345		5,345		5,345		5,345		5,345		5,345		5,345		5,345		

Note: Parentheses indicate the omitted or reference category.  
†*p* < .10. \**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

## Delinquency

Across all 10 acts of delinquent behavior, the risk of having a first delinquent activity is significantly lower for adolescents with more positive father-child relationships, net of the effects of other variables including the mother-child relationship (see Table 3). Similarly, the risk of first delinquent activity is significantly higher for adolescents whose fathers have an authoritarian parenting style compared with adolescents whose fathers have an authoritative parenting style (reference category), net of controls and mothers' parenting styles. The risk of first delinquent activity is also significantly lower for adolescents with higher levels of father monitoring or awareness compared with lower levels of father monitoring or awareness across all delinquent behaviors. Each unit increase in the paternal monitoring scale is associated with a reduction in the predicted odds of first delinquent activity.

Additional covariates that are significantly associated with an increase in the risk of first delinquent activity across a variety of delinquent behaviors include having a mother with either an uninvolved, permissive, or authoritarian parenting style (compared with an authoritative parenting style), being male, being an older adolescent as opposed to a younger adolescent, and living in a household that received AFDC compared to one that did not.

Covariates that are significantly associated with a decrease in the risk of first delinquent activity across a variety of delinquent behaviors include a positive mother-child relationship, higher levels of maternal monitoring or awareness, a positive mother-father relationship, and being Asian compared to non-Hispanic White (reference category). The coefficient for year (time) is significant and positive for all delinquent behaviors, indicating a linear trend in the risk of first delinquent activity for the whole sample.

## Substance Use

Table 4 shows that the risk of first substance use is significantly lower for adolescents with more positive father-child relationships, net of the effects of other variables including the mother-child relationship. The risk of first substance use is only marginally significant for adolescents whose fathers have an authoritarian parenting style compared with adolescents whose fathers have an authoritative parenting style. This finding is consistent across all three substance use outcomes. The risk of first substance use is significantly lower for adolescents with higher levels of father monitoring or awareness.

Additional covariates that significantly increase the risk of first substance use include having a mother with an uninvolved (marginal significance) or permissive parenting style compared to a mother with an authoritative parenting style, being an older compared to being a younger adolescent, hav-

**Table 4**  
**Odds Ratios and Huber Corrected Standard Errors for Baseline**  
**Logistic Regression Analysis of the Effects of the Father-Child**  
**Relationship and Parenting Styles on Adolescents' First Substance**  
**Use, National Longitudinal Study of Youth 1997, 1997 to 1999**

Variable	Smoked Cigarettes		Had a Drink of Alcohol		Used Marijuana	
	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE
Parent-child relationship						
Father-child relationship	0.99*	0.008	0.98*	0.008	.98*	0.008
Mother-child relationship	0.97***	0.008	0.96***	0.008	.96***	0.008
Parental monitoring						
Father	0.97***	0.007	0.96***	0.007	.96***	0.007
Mother	0.99***	0.007	0.96***	0.008	.97***	0.008
Parenting style						
Father's parenting style (Authoritative)						
Uninvolved	1.09	0.062	1.09	0.061	1.08	0.062
Permissive	0.99	0.054	0.99	0.054	0.98	0.055
Authoritarian	1.14*	0.055	1.12*	0.055	1.11*	0.055
Mother's parenting style (Authoritative)						
Uninvolved	1.12†	0.061	1.11†	0.064	1.11†	0.064
Permissive	1.25***	0.050	1.19***	0.050	1.19***	0.050
Authoritarian	1.11	0.059	1.11	0.059	1.10	0.060
Biological status (Biological father)						
Nonbiological father	1.18***	0.048	1.19***	0.046	1.20***	0.048
Parental education						
Father (College plus)						
Less than high school	1.17*	0.069	1.18*	0.069	1.17*	0.069
High school	1.15*	0.068	1.15*	0.063	1.15*	0.068
Some college	1.06	0.083	1.05	0.086	1.05	0.086
Mother (College plus)						
Less than high school	1.00	0.076	1.00	0.076	0.99	0.076
High school	1.00	0.070	1.00	0.071	1.00	0.071
Some college	1.12	0.085	1.13	0.086	1.12	0.086
Employment (Father employed)						
Father not employed	1.00	0.041	1.00	0.041	0.99	0.041
Mother-father relationship	0.99***	0.001	0.98***	0.000	0.96***	0.000

**Table 4 (continued)**

Variable	Smoked Cigarettes		Had a Drink of Alcohol		Used Marijuana	
	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE
Family context						
Number of children	0.90***	0.019	0.94***	0.019	0.90***	0.019
Received Aid to Families with Dependent Children	0.93*	0.041	0.93*	0.041	0.92*	0.041
Child characteristics						
Race						
(Non-Hispanic White)						
African American	0.59***	0.057	0.59***	0.057	0.58***	0.057
American Indian, Eskimo, or Aleut	0.65*	0.241	0.61*	0.245	0.60*	0.245
Asian or Pacific Islander	0.47***	0.150	0.46***	0.150	0.46***	0.150
Hispanic	0.93	0.058	0.92	0.058	0.92	0.058
School enrollment status						
Enrolled in school	1.14	0.641	1.14	0.643	1.13	0.643
Gender						
(Female)						
Male	1.04	0.037	1.05	0.037	1.04	0.037
Age	1.57***	0.056	1.55***	0.056	1.54***	0.056
Year	0.89***	0.027	0.89***	0.028	0.83***	0.028
Log likelihood ( <i>df</i> )	9,508 (29)		9,508 (29)		9,508 (29)	
Number of person-year observations	7,566		7,566		7,566	
<i>N</i>	5,345		5,345		5,345	

Note: Parentheses indicate the omitted or reference category.

†*p* < .10. \**p* < .05. \*\*\**p* < .001.

ing a father with less than a college-level education or higher compared to a father with college-level education or higher, living in a household that received AFDC (compared to one that did not), and having a nonbiological father (compared to a biological father).

Other covariates that significantly decrease the risk of first substance use across all substance use outcomes include a more positive mother-child relationship, higher levels of maternal monitoring or awareness, having a biological father as opposed to a stepfather, a more positive mother-father relationship, having a larger number of coresident children younger than 18 in the household, and being African American, Indian, or Asian compared with being non-Hispanic White (reference category). The odds ratio for year

(time) is negative and significant for all substance use outcomes, indicating a nonlinear trend in the risk of first substance use for the whole sample.

*Research Question 3:* Net of other individual and contextual factors, does the father-child relationship interact with fathers' parenting styles to influence the risk of delinquent behaviors and substance use among adolescents?

Although the father-child relationship may influence child outcomes, looking at this relationship in isolation from other aspects of parenting may be misleading. We therefore test for differences in the influence of the father-child relationship according to fathers' parenting styles by including a two-way interaction term between the father-child relationship variable and parenting styles. These interaction terms were added to each of the baseline models for all delinquency and substance use outcomes. Table 5 presents the results of the interaction tests. To conserve space, only the main effects of the composite variables involved in the interactions are shown. The interaction term was significant for all delinquency and substance use outcomes except for running away and having a drink of alcohol, indicating that the father-child relationship does interact with parenting styles (authoritarian parenting) to predict a reduced likelihood of risky behaviors. The positive influence of the father-child relationship on risk behaviors is strongest for authoritarian fathers. In other words, a positive father-child relationship is more protective for adolescents with authoritarian fathers as opposed to authoritative fathers. The results of log likelihood tests between the models of direct effects and the models with interaction effects show that the interaction effect models do improve the fit of the data.

*Research Question 4:* Net of other individual and contextual factors, does the father-child relationship interact with adolescent gender to influence the risk of delinquent behaviors and substance use among adolescents?

Because the father-child relationship may vary by gender of the adolescent and because the family processes associated with family behaviors differ by gender, we expect that the adolescent's gender will interact with the father-child relationship to influence risky behaviors. To examine this relationship, we include a two-way interaction term between the father-child relationship variable and adolescent gender in each of the baseline models for all delinquency and substance use outcomes. Results reported in Table 5 indicate that the interaction term was significant for all delinquency and substance use outcomes except for running away and having a drink of alcohol. The positive influence of the father-child relationship on risk behaviors is

*(text continues on p. 876)*



**Table 5**  
**Odds Ratios and Huber Corrected Standard Errors for Baseline Logistic Regression Analysis of**  
**the Interaction Effects of the Father-Child Relationship on Adolescents' First Delinquent Activity**  
**and Substance Use, National Longitudinal Study of Youth 1997, 1997 to 1999**

Interaction Models	Delinquent Behavior											
	Arrested		Sold Drugs		Attacked Someone		Carried a Hand Gun		Belonged to a Gang		Damaged or Destroyed Property	
	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
Parenting styles interaction model												
Parent-child relationship	0.98*	0.008	0.99	0.008	0.97*	0.008	0.96*	0.007	0.95*	0.005	0.99*	0.008
Father-child relationship												
Parenting styles												
(Authoritative)												
Uninvolved	1.06	0.006	1.05	0.006	1.04	0.007	1.03	0.006	1.05	0.003	1.04	0.004
Permissive	1.00	0.007	1.01	0.005	1.01	0.006	1.01	0.005	1.01	0.002	1.02	0.003
Authoritarian	1.16*	0.005	1.12*	0.004	1.03*	0.005	1.02*	0.004	1.04*	0.011	1.06*	0.007
(Father-Child Relationship ×												
Authoritative Parenting Style)												
Father-Child Relationship ×												
Uninvolved	1.02†	0.016	1.01†	0.016	1.06	0.016	1.103†	0.015	1.06†	0.016	1.04	0.015
Father-Child Relationship ×												
Permissive	0.95†	0.018	1.01	0.014	0.95†	0.018	1.01	0.017	0.95†	0.018	1.01†	0.017
Father-Child Relationship ×												
Authoritarian	0.95*	0.016	0.94*	0.014	0.93*	0.016	0.92*	0.013	0.90*	0.016	0.98*	0.013
Log likelihood ( <i>df</i> )	8,923 (29)		9,508 (29)		8,923 (29)		9,508 (29)		9,508 (29)		9,508 (29)	
Gender interaction model												
Parent-child relationship	0.98*	0.008	0.99	0.008	0.97*	0.008	0.96*	0.005	0.95*	0.005	0.99*	0.008
Father-child relationship												

(continued)

Table 5 (continued)

Interaction Models	Delinquent Behavior											
	Arrested		Sold Drugs		Attacked Someone		Carried a Hand Gun		Belonged to a Gang		Damaged or Destroyed Property	
	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
Gender (Female)												
Male	1.76***	0.042	1.75***	0.040	1.74***	0.040	1.71***	0.041	1.74***	0.041	1.75***	0.041
(Father-Child Relationship × Female Youth)												
Father-Child Relationship × Male Youth	1.21*	0.015	1.105**	0.013	1.01*	0.010	1.02*	0.010	1.22*	0.010	1.05*	0.013
Log likelihood ( <i>df</i> )	8.615 (27)		8.615 (27)		8.615 (27)		8.615 (27)		8.615 (27)		8.615 (27)	

**Table 5 (continued)**

Interaction Models	Delinquent Behavior							
	Stole From Store		Stole From Person or House		Receiving, Possessing, or Selling Stolen Property		Substance Use	
	Coefficient	SE	Coefficient	SE	Coefficient	SE	Smoked Cigarettes	Used Marijuana
Parenting styles interaction model								
Parent-child relationship	0.99*	0.007	0.96*	0.008	0.95	0.009	0.96*	0.008
Father-child relationship								
Parenting styles (Authoritative)	1.00	0.009	1.01	0.001	1.01	0.001	1.01	0.008
Uninvolved	1.00	0.009	1.02	0.002	1.02	0.002	1.00	0.007
Permissive	1.2*	0.002	1.03*	0.003	1.03	0.003	1.01*	0.008
Authoritarian								
(Father-Child Relationship × Authoritative Parenting Style)	1.08†	0.016	1.05	0.015	1.03	0.016	1.03	0.015
Father-Child Relationship × Uninvolved	0.96†	0.018	1.01	0.017	0.96†	0.018	1.01†	0.017
Father-Child Relationship × Permissive	0.95*	0.016	0.98*	0.013	0.94*	0.016	0.97*	0.013
Father-Child Relationship × Authoritarian	8,923 (29)		9,508 (29)		8,923 (29)		9,508 (29)	
Log likelihood (df)								8,923 (29)
Gender interaction model								
Parent-child relationship	0.99*	0.007	0.96*	0.008	0.95	0.009	0.96*	0.008
Father-child relationship								
Gender (Female)	1.73***	0.041	1.78***	0.041	1.78***	0.041	1.04	0.037
Male								
(Father-Child Relationship × Female Youth)	1.45*	0.016	1.21*	0.016	1.01*	0.015	1.11*	0.015
Father-Child Relationship × Male Youth	8,615 (27)		8,615 (27)		8,615 (27)		8,615 (27)	
Log likelihood (df)								8,615 (27)

Note: Parentheses indicate the omitted or reference category.

† $p < .10$ . \* $p < .05$ . \*\*\* $p < .001$ .

relationship is more protective of risk behaviors for males than females. The results of log likelihood tests between the models of direct effect and the models with interaction effects show that the interaction effect models do improve the fit of the data.

## Discussion and Conclusion

The central hypothesis in this study is that the father-child relationship has a significant and unique influence on adolescent risk behaviors, above and beyond the mother-child relationship. We further hypothesize that adolescents whose fathers have an authoritative parenting style (compared with other parenting styles) have a reduced risk of engagement in risk behaviors. We also hypothesize that the father-child relationship interacts with parenting styles to reduce the risk of delinquent behaviors and substance use. Our final hypothesis is that the association between the father-child relationship and the risk of substance use and delinquency will differ for male and female adolescents. Our analyses support all four of these hypotheses.

First, consistent with our initial hypothesis, a more positive father-child relationship is associated with a reduced risk of first delinquency and substance use across all delinquency and substance use behaviors. These results remain consistent even after using controls for various aspects of the mother-child relationship, maternal monitoring, other maternal characteristics, family- and household-level characteristics, and child-level characteristics. We interpret this to mean that fathers matter, though there are many other important components of an adolescent's life that matter as well.

Also consistent with our hypothesis, we found that an authoritarian parenting style among fathers is associated with an increased risk of transition into risky behaviors, even after controlling for maternal parenting styles and other family-, household-, and individual-level covariates. That is, adolescents whose fathers have an authoritarian parenting style are at increased risk of engaging in delinquent activity compared to adolescents whose fathers have an authoritative parenting style. This is consistent with previous research that an authoritative upbringing is associated with instrumental and social competences and lower levels of problem behaviors (Conger et al., 1997).

In addition and consistent with our hypothesis, we find that the father-child relationship does interact with parenting styles to predict a reduced likelihood of risky behaviors (delinquency). By itself, authoritarian parenting is related to negative outcomes, but combined with a more positive father-child relationship, the effects on risky behaviors are reduced. These results imply that although the father-child relationship may influence child

outcomes, looking at this relationship in isolation may be incomplete. Both relationships and behaviors are important components of parenting that can influence adolescent outcomes.

Our final hypothesis was that the association between the father-child relationship and adolescent risk behaviors would vary for male and female adolescents. The positive influence of the father-child relationship on risk behaviors is stronger for male than for female adolescents. This indicates that the father-child relationship is more protective against risk behaviors for males as opposed to females.

Our finding that the father-child relationship matters is consistent with previous research that shows that positive paternal involvement benefits children (Harris et al., 1998; Lamb, 1997; Marsiglio et al., 2000). The father-child relationship has also been found in previous research to affect children's academic success, externalizing behaviors, and social behaviors (Parke, 1996; Parke & Buriel, 1998). These associations between paternal behaviors and offspring outcomes have tended to be, on average, moderate rather than large, as is also the case in this study.

Our findings of how parenting styles matter for adolescent behavioral outcomes are also consistent with previous research on this issue. Several studies have demonstrated that optimal outcomes for children are associated with authoritative parenting (Lamborn, Mounts, Steinberg, & Dornbusch, 1991; Steinberg, Lamborn, Dornbusch, & Darling, 1992; Steinberg, Mounts, Lamborn, & Dornbusch, 1991). This type of parenting style includes a cluster of parental behaviors such as showing affection, being responsive to children's needs, encouraging children to do well, giving everyday assistance, providing supervision, exercising noncoercive discipline, and serving as role models of positive behavior (for a review, see Maccoby & Martin, 1983).

The fact that both the father-child relationship and parenting styles are significant predictors of adolescents' risk behaviors suggests that children benefit when fathers (and mothers) provide quality interactions to them in the home and when fathers (and mothers) engage in authoritative parenting. In addition, the fact that the delinquency and substance use outcomes differ by gender suggests that fathers play an important role in the lives of both female and male adolescents and that their influence is particularly important for sons.

The present study represents an improvement on previous studies of fatherhood in several important ways. Using data from fathers in a nationally representative sample, we are able to demonstrate that the father-child relationship is negatively related to the number of behavior problems exhibited by children, and this finding holds when we control for the mother-child relationship. Our study provides strong evidence of a link among paternal involvement, paternal parenting styles, and adolescents' behavior.

Second, we use longitudinal data, whereas previous studies have used cross-sectional designs and could not track how parenting over time can influence child outcomes. In addition, using a hazard model allows us to account for the potential effects of censoring and time-dependent covariates (time-varying explanatory variables) and, therefore, the timing of events on our outcomes of interest.

Third, this study is also one of few to measure the quality of the father-child relationship in addition to the mother-child relationship and maternal parenting styles. Capturing dimensions of the quality and quantity of involvement and parenting styles reminds us that a constellation of parenting behaviors is ideal for good parenting. The conceptualization of involvement as a combination of several components provides a strong framework for understanding how fathers can influence their children.

Although these findings provide evidence of how both the father-child relationship and parenting styles work, there are some limitations of this study that should be noted. First, we use abbreviated measures of the father-child relationship. As mentioned, there is an ongoing fatherhood initiative to create valid and reliable measures of the father-child relationship (Bronte-Tinkew, Moore, & Cabrera, 2002). However, both the psychometric and substantive analyses presented here suggest that the measures in the NLSY97 capture critical influences in the lives of adolescents and are robust predictors of important outcomes.

Unfortunately, our data do not contain variables that would allow us to measure the possible negative influences of parents' own risky behaviors on child outcomes, nor did we conduct separate analyses for stepfathers versus biological fathers. Furthermore, because our sample contains two-parent families that remained stable for at least 3 years, these families are not representative of all youth who are at risk of engaging in risky behaviors. Our results may also be affected by adolescent underreporting of negative behaviors. Finding other valid ways to measure adolescent risky behaviors, therefore, would be beneficial.

Another limitation involves the fact that adolescents provide information about the father-child relationship and their own risky behaviors. For this reason, same-source bias may affect our estimates of father effects. A design in which children provide information about paternal and maternal behaviors and in which some other source (teacher, other observer) provides information about adolescent behaviors would allow independent corroboration of the unique effects of the father-child relationship on adolescent outcomes, though such a reporter is unlikely to know about substance use or delinquency.

Policy implications result from this study. Regarding fathering, our study provides continuing evidence that fathers are important to the well-being of

their children and thus suggests that any holistic policy or program to promote child and adolescent well-being should include fathers, when feasible.

In sum, fathers matter for separate and related reasons. The father-child relationship reflects both emotional and behavioral components. In addition, an authoritative fathering style and paternal monitoring or awareness also influence adolescent risk taking. Work aimed at improving the measurement and collection of the father-child relationship data in nationally representative surveys and including fathers in analytical work is well warranted.

## Notes

1. Other analyses not presented here use these variables in an index, and the substantive results are similar to those reported here.

2. Conceptually, monitoring and support are key concepts in identifying the different parenting styles, and there could be a potential correlation among the father-child relationship, parenting style, and monitoring covariates. Our tests of correlation indicate that these covariates are only moderately correlated with correlation coefficients that range from .08 to .52.

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