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How Do Families Matter? Age and Gender Differences in Family Influences on Delinquency and Drug Use

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Abstract

Parenting practices, age, and gender all influence adolescent delinquency and drug use, but few studies have examined how these factors interact to affect offending. Using data from 18,512 students in Grades 6, 8, 10 and 12, this study found that across grades, parents treated girls and boys differently, but neither sex received preferential treatment for all practices assessed, and younger children reported more positive parenting than older students. Family factors were significantly related to delinquency and drug use for both sexes and for all grades. However, particular parenting practices showed gender and age differences in the degree to which they were related to outcomes, which indicates complexities in parent/child interactions that must be taken into account when investigating the causes of adolescent offending and when planning strategies to prevent the development of problem behaviors.

Keywords

Delinquency; Substance Use; Gender; Family-focused Prevention Programs; Lifecourse Criminology

Introduction

Gender, age, and family experiences are some of the most important predictors of criminal involvement. Much research indicates that males are more likely to participate in crime compared to females (Chesney-Lind, 1997; Elliott, 1994; Greenfeld & Snell, 1999; Snyder & Sickmund, 2006; Steffensmeier, 2001), and that individual offending rates tend to peak in late adolescence then drop off in early adulthood (Blumstein, Cohen, Roth, & Visser, 1986; Elliott, 1994; Farrington, 1986; Snyder & Sickmund, 2006). Many criminological theories identify family factors such as family management practices and attachment to parents as important influences on drug use and delinquency, and empirical evidence supports these claims (Cernkovich & Giordano, 1987; Hawkins, Herrenkohl, Farrington et al., 1998; Hoeve, Dubas, Eichelsheim et al., 2009; Loeber & Dishion, 1983; Sampson & Laub, 1993).

Although many investigations have examined age or gender differences in the effects of parenting practices on offending, much less research has examined the ways in which gender, age, and family experiences interact to affect delinquency; for example, by

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identifying the degree to which parenting practices have different effects on crime at different ages and whether or not these developmental differences vary for boys and girls. The current study utilizes lifecourse developmental and feminist theory to investigate age and gender differences in the relationship between parenting practices and offending.

Developmental and Feminist Theories of Delinquency

Lifecourse developmental theories investigate how involvement in crime and the factors that influence offending vary at different stages of development (Elliott, 1994; Farrington, 2003; Sampson & Laub, 1993). Family experiences are prominent in lifecourse theories (Moffitt, 1993; Patterson, DeBaryshe, & Ramsey, 1989; Sampson & Laub, 1993; Thornberry, 1987). The age-graded theory of crime (Sampson & Laub, 1993), for example, agrees with social control theorists (Gottfredson & Hirschi, 1990; Hirschi, 1969) that parental monitoring and support are critical in controlling the delinquency of young children. Gottfredson and Hirschi (1990) contend that parents who actively monitor children's behavior, set and communicate clear expectations that delinquency is not acceptable, and reward compliance (and punish transgressions) reduce the likelihood of youth offending (by instilling self-control in children). Hirschi (1969) adds that strong bonds between children and parents are important. When parents show affection for their children, establish good communication with them, provide them opportunities to be involved in the family, and positively recognize their children for displaying positive behaviors and refraining from delinquency, parents create strong, positive relationships with their children (Catalano & Hawkins, 1996). Youth, in turn, refrain from problem behaviors because they do not want to risk losing their approval and affection (Hirschi, 1969).

Sampson and Laub (1993) and others (Patterson et al., 1989; Thornberry, 1987) recognize that family experiences are critical in controlling the behavior of young children but contend that parental influences wane over time. During adolescence, children begin asserting their autonomy, seeking independence, and finding new role models to emulate. Children's growing involvement in delinquency during this period can strain the parent/child relationship, increase conflict, and cause parents to relax their attempts to control children's behavior (Dishion, Nelson, & Bullock, 2004; McGue, Elkins, Walden, & Iacono, 2005). As parenting skills worsen, parents' ability to affect children's behavior may deteriorate. Alternatively, as Bricker et al. (2007) state, parental influence may become *more* important during adolescence, given that the transmission of norms and values from parents to children requires time and repetition before effects are realized.

Despite the theoretical attention, there is a relative lack of empirical research investigating changes in *levels* or *effects* of parenting practices on offending across developmental periods (Holden & Miller, 1999), and studies that have investigated these issues have produced mixed results. Research has found that parental monitoring becomes less restrictive and parent/child attachment decreases from early to late adolescence (Bronte-Tinkew, Moore, & Carrano, 2006; Loeber, Drinkwater, Yin et al., 2000; McGue et al., 2005; Simons-Morton, Chen, Abroms, & Haynie, 2004). However, two other studies, both using data from high-risk youth, found consistent levels of parental rule-creation and rule-enforcement (Herrenkohl, Hill, Hawkins, Chung, & Nagin, 2006) and parent/child communication (Loeber et al., 2000) during adolescent, while other research has indicated increases in family conflict across the teenage years (Loeber et al., 2000; McGue et al., 2005). Regarding the effects of parenting on outcomes, single studies (Jang, 1999, 2002; Scaramella, Conger, & Simons, 1999; Tucker, Martinez, Ellickson, & Edelen, 2008; Wright & Cullen, 2001) and one meta analysis (Hoeve et al., 2009) found that the relationship between a variety of parenting practices and offending did not generally vary across adolescence. Other studies, however, have shown a declining effect of parenting practices on offending, including

parent supervision (Jang & Krohn, 1995; Paternoster, 1988) and parent/child attachment (Thornberry, Lizotte, Krohn, Farnworth, & Jang, 1991).

Prior literature has not conclusively demonstrated support for the lifecourse hypothesis that parenting practices weaken over time. However, the research has been limited in assessing relatively short time spans, with independent and dependent variables typically separated by 1 to 4 years and parenting practices often measured at only one time point, even in longitudinal analyses. Furthermore, many studies have included only one or two parenting practices in their analysis, even though there is evidence that effects may differ according to the parenting variables assessed.

Most importantly for the current study, much lifecourse research has failed to assess gender differences or to even include female participants at all (Holden & Miller, 1999; Kroneman, Loeber, Hipwell, & Koot, 2009), which is surprising given the assertion by some feminists (Kruttschnitt & Giordano, 2009; Silverthorne & Frick, 1999) that family experiences are different for boys and girls. There may be marked gender differences in how parents raise their children, with parents more likely to monitor girls' behaviors, keep girls closer to home, and reinforce conforming rather than deviant behaviors more often for daughters than for sons (Bottcher, 1995; Hill & Atkinson, 1988; Keenan & Shaw, 1997). In contrast, parents are more likely to endorse (or passively accept) deviant behaviors in their male children and to allow sons more freedom, which results in greater opportunities for boys to engage in delinquency. Some feminists also theorize that because parents teach girls to place more importance on family relationships (Bottcher, 1995; Chesney-Lind, 1997; Keenan & Shaw, 1997; Kroneman et al., 2009; Kruttschnitt & Giordano, 2009), the effects of family factors on offending will be stronger for girls compared to boys. Thus, even if boys and girls received similar levels of parenting monitoring or parent support, the protective effects of these experiences would reduce delinquency more for girls than boys.

Empirical research regarding gender differences in parent/child relationships and in the effects of parenting practices on offending has been mixed. Some investigations have found that parents monitor the behavior of girls more than boys (Bottcher, 1995; Cernkovich & Giordano, 1987; Crosnoe, Erickson, & Dornbusch, 2002; Keenan & Shaw, 1997), that girls have a stronger attachment to parents (Alarid, Burton, & Cullen, 2000; Canter, 1982), and that parents are more accepting of boys' drug use and delinquency (Fagan, Van Horn, Hawkins, & Arthur, 2007). In addition, close parental monitoring and supervision (Blitstein, Murray, Lytle, Birnbaum, & Perry, 2005; Farrington & Painter, 2004) and attachment to parents (Alarid et al., 2000; Blum, Ireland, & Blum, 2003; Hill & Atkinson, 1988; Laundra, Kiger, & Bahr, 2002) have been shown to reduce offending more for females than males. However, other studies have found that boys report greater levels of attachment to parents (Daigle, Cullen, & Wright, 2007; Fagan et al., 2007; Rowe, Vazsonyi, & Flannery, 1995), and that effective parenting reduces delinquency more for boys than girls (Bronte-Tinkew et al., 2006; Burton, Cullen, Evans et al., 1995; Canter, 1982). Still other research demonstrates that parenting practices have similar effects on substance use and delinquency for both sexes (Fagan et al., 2007; Fergusson & Horwood, 2002; Kruttschnitt & Giordano, 2009; Moffitt, Caspi, Rutter, & Silva, 2001; Rowe et al., 1995; Scaramella et al., 1999; Smith & Paternoster, 1987). Studies by Cernkovich and Giordano (1987) and Heimer and DeCoster (1999) find that the impact of particular family factors on outcomes vary for boys and girls. For example, Heimer and DeCoster (1999) found that bonding to family members had a stronger effect on violence for girls compared to boys, while coercive discipline and parental supervision were more strongly related to violence for boys.

The Relationship Between Age, Gender, Parenting Practices and Offending

While developmental theories have largely overlooked the importance of gender, and feminist research has often failed to examine age differences in parenting practices, there is emerging evidence that age, gender, and family experiences should be considered in tandem in order to fully understand how the family environment shapes adolescent offending. In three separate studies involving largely white children from intact families living in rural areas, Laird et al (2003) found that parental monitoring significantly declined from Grades 9-12 for boys compared to no changes for girls; Simons et al (2001) reported increases in “inept parenting” (a combined measure of poor monitoring, harsh discipline, and hostility) for girls but not boys from Grades 7-10; and McGue et al (2005) reported greater parent conflict and worse parent/child attachment for female versus male twins from Grades 6-9. Regarding the effects of parenting practices, Jang and Krohn (1995) reported that for high-risk, African American youth in Pittsburgh, the relationship between parental supervision and drug use/delinquency weakened from Grades 7 to 9 for both sexes and was not significant in Grades 10-12 for either sex. Simons et al (2001) found that inept parenting was not associated with increases in delinquency during adolescence for either sex, but using a similar sample and measures, Scaramella et al (1999) found significant relationships between parenting and offending from Grades 8-12 for both sexes. Finally, using national, cross-sectional data collected in 1972, Seydlitz (1991) reported that the ten family variables considered were more strongly related to drug use and delinquency during mid-adolescence (age 13-16) for males, but for females, they were more important in late-adolescence (age 15-18).

Taken as a whole, the emerging research suggests that mean levels of parenting practices are likely to show greater variability by age and gender compared to the effects of parenting practices on adolescent offending. That is, there is more reason to expect interactions between age, gender and parenting when assessing the degree to which parents monitor, supervise, and/or support their children, and more uniformity when investigating the relationship between parenting practices and adolescent problem behaviors (i.e., positive parenting practices has been related to less drug use and delinquency across gender and age groups). However, these patterns have not been conclusively established, nor have studies simultaneously examined age and gender differences in the overall influence of the family and in the independent effects of parenting practices. Both the mixed evidence and methodological limitations of prior work suggest a need for further investigation of these issues. Many studies have assessed change over a relatively short time span, have involved either high-risk or small, geographically-limited samples, and have examined changes in either mean levels or in the effects of parenting practices on offending, but not both. With some exceptions, most prior literature has examined only one or two types of parenting practices and has not investigated the effects of individual family factors and the combined effects of these practices on children's drug use and delinquency (Hoeve et al., 2009).

The Current Study

The current study seeks to offer a more complete understanding of the ways in which parents affect children. Three research questions are addressed:

1. Do mean levels of parenting practices vary by sex and grade?
2. Do the combined effects of parenting practices on substance use and delinquency vary by sex and grade?
3. How do specific parenting practices contribute to the overall influence of the family on substance use and delinquency, by sex and grade?

Our study addresses these questions using data from a large, geographically diverse study. Data were collected in 2004 from students in Grades 6, 8, 10, and 12 who attended public schools in 24 communities in seven states. Although our data are cross-sectional, information was collected from children across the full span of adolescence (i.e., ages 12-18), including the periods during which offending by both males and females is likely to begin and peak, which (along with a very large sample size) facilitates the examination of age and gender differences. The study examines gender and age differences in mean levels of six parenting practices, as well as the individual and combined effects of these practices on offending using a composite variable herein referred to as “family risk.” This approach allows assessment of the effects of the family environment as a whole, which is useful given that children who are exposed to multiple family risk factors are at greatest risk for future offending (Farrington, 2003; Herrenkohl, Maguin, Hill et al., 2000), and of the relative contributions of each of the six parenting practices to offending, by age and gender, to better assess the complex processes through which parents impact their children.

Method

Participants

Data were obtained from students participating in the Community Youth Development Study (CYDS), a community randomized trial testing the efficacy of the Communities That Care (CTC) operating system in preventing problem behaviors such as substance use and delinquency. In the fall of 2002, 24 communities were randomly assigned to implement CTC or to a control condition in which communities conducted prevention services as usual. All 24 communities were incorporated towns located in rural or suburban areas in seven states. The mean population size was 14,646 residents (range 1,578 to 40,787) and, on average, 37% of the student population was eligible for free or reduced-price lunch (range: 21-66%) (Hawkins, Catalano, Arthur et al., 2008). The 12 intervention communities received training in the CTC system in 2003. In spring 2004, prior to the start of planned prevention services, 6th-, 8th-, 10th-, and 12th-grade public schools students in all 24 communities completed the Communities That Care Youth Survey (Arthur, Hawkins, Pollard, Catalano, & Baglioni, 2002). Based on school enrollment figures, the average participation rate in the survey was 82% (see Table 1). The total sample included 18,512 students, about half of whom were female. In Grade 6, 69% of students self-identified their race/ethnicity as European American, 14% identified as Hispanic, 4% identified as African American, and 14% were other racial/ethnic groups (see Table 1). Percentages were similar in other grades (see Table 1).

Measures

The CTC Youth Survey measures 30 risk and protective factors and self-reported rates of substance use and delinquency. Prior evaluations have established measurement invariance for the measures for boys and girls and different racial/ethnic groups (i.e., African American, Asian American, Latino, Native American, and European American) (Arthur et al., 2002; Glaser, Van Horn, Arthur, Hawkins, & Catalano, 2005). The development of the survey and the psychometric properties and validity of the scales are reported in detail elsewhere (Arthur et al., 2002; Glaser et al., 2005).

In this study, the CTC Youth Survey was administered during one classroom period and data collection procedures ensured the anonymity and confidentiality of students' responses. Screening criteria were used to guard against dishonest or biased answers and included student reports of how honest they were in completing the survey, use of a fictitious drug, and inconsistencies in patterns of reported substance use and delinquency. Using these criteria, 3% to 6% of students in each grade were excluded from the analyses.

Parenting Practices—Six parenting practices were measured. **Poor family management** was assessed with eight items ($\alpha=.85$). Three items asked if students thought they would be caught by parents for engaging in deviant behaviors (*skipping school, carrying a handgun, or drinking beer, wine or liquor without parents' permission*). Five items measured parents' rules, expectations, and monitoring of children's behaviors: *Would your parents know if you did not come home on time? When I am not at home, one of my parents knows where I am and who I am with. The rules in my family are clear. My family has clear rules about alcohol and drug use. My parents ask if I've gotten my homework done*. Respondents indicated agreement with each statement using a 4-point Likert scale in which higher scores indicated worse family management.

Youth reported levels of (verbal) **family conflict** based on their agreement (on a 4-point scale) with three items ($\alpha=.77$): *People in my family often insult or yell at each other. People in my family have serious arguments. We argue about the same things in my family over and over*. Higher scores indicated more family conflict.

Parental acceptance of delinquency and drug use was assessed with six items ($\alpha=.84$) indicating the extent to which respondents thought their parents would think it was okay for them to: *drink beer, wine, or hard liquor; smoke cigarettes; smoke marijuana; steal anything worth more than \$5; draw graffiti or write things or draw pictures on buildings or other property; and pick a fight with someone*. Items were measured on a 4-point scale (from very wrong to not very wrong), such that higher scores indicated more acceptance of problem behaviors.

Two variables measured **attachment to mothers** ($\alpha=.88$) and **attachment to fathers** ($\alpha=.90$). Each was assessed using three items measured on a 4-point scale (from very low agreement to very high agreement), in which higher scores represented more attachment: *Do you feel close to your mother/father? Do you share your thoughts and feelings with your mother/father? Do you enjoy spending time with your mother/father?*

Parental reinforcement of prosocial behavior included two items ($\alpha=.88$): *My parents notice when I am doing a good job and let me know about it. How often do your parents tell you they're proud of you for something you've done?* Each item was rated on a 4-point scale and coded such that higher scores were expected to relate to reduced substance use or delinquency.

Each of the six parenting practices was measured as a latent variable with survey items as indicators. The total and unique effects of the six parenting practices on drug use and delinquency were measured using an emergent variable (Bollen & Lennox, 1991; Cohen, Cohen, Teresi, Marchi, & Velez, 1990), referred to as “family risk,” which was scaled such that higher levels of risk were expected to be associated with increases in drug use and delinquency. The emergent variable model was selected for several reasons. A more common approach to assessing the combined effects of multiple risk factors usually entails dichotomizing the individual variables (e.g., poor family management) using some cut-off point and then summing them. This summary score gives equal weight to each of the included variables assuming, for example, that each parenting practice contributes equally and additively to children's delinquency and drug use. The emergent variable is conceptually analogous to the summary score but allows measurement of both the overall effects of the family factors and the unique contribution of each parenting practice to the total score, and thus provides more information about how the family environment affects children. The emergent variable measures whether different parenting practices contribute to the overall influence of family risk on offending in different ways across groups. By using an optimally weighted variable whose composition may change across groups, it can identify the extent to

which different parenting practices are salient for girls and boys and for children of different grades.

This method differs from reliance on latent variables, which would assume that there is an underlying level of family risk upon which families vary. In latent variable models, the unobserved construct (i.e., family risk) is thought to cause each of the observed indicators (i.e., each of the six parenting practices) and is defined as the extent to which the indicators are correlated. Children who experience one type of poor parenting (such as poor family management) are thought to be more likely to experience other types of poor parenting (such as weak bonds with parents). In contrast, an emergent variable is an unobserved variable in which the indicators come together to produce the construct—they are not indicators of a global underlying construct—regardless of the degree of correlation among the indicators (Cohen et al., 1990; Jarvis, MacKenzie, & Podsakoff, 2003). While some correlation among the parenting practices was expected, strong correlations between, for example, family conflict and parental acceptance of delinquency and drug use were not anticipated. Thus, modeling family risk as a latent variable would not have been appropriate.

Delinquency—Students reported the number of times in the past year they had participated in seven delinquent activities: having been arrested, taken a handgun to school, attacked someone with the idea of seriously hurting them, stolen or tried to steal a motor vehicle, purposely damaged or destroyed property, taken something from a store without paying for it, and stolen something worth more than five dollars. Students reported frequency of delinquency using eight response choices. Because very few respondents indicated high-frequency offending, responses were recoded into four categories: never, 1-2 times, 3-5 times, 6- or more times. Very few girls reported having taken a handgun to school, so this item was recoded as a binary variable (comparing no offending to one or more offenses) for both sexes.

A latent variable with seven indicators was constructed to represent self-reported delinquency. This approach assumed that delinquency (and, separately, substance use) could be represented as an underlying variable with a continuum on which students varied.

Substance Use—Students reported their lifetime and past-month use of cigarettes, alcohol (beer, wine, or hard liquor), and marijuana. Frequency of use was assessed on a 5-point scale for smoking (from never to regular use) and a 7-point scale for alcohol and marijuana use (from zero to 40 or more occasions). Students reported binge drinking as the number of times in the past two weeks they had five or more alcoholic drinks in a row, with six response choices (from zero to 10 or more times). A latent variable based on these seven indicators was constructed and differentiated among three types of users: those who reported no use, those who reported lifetime use but not past-month use, and those who reported past-month use (including those who reported any binge drinking)¹.

Control Variables—The analysis included seven control variables. Demographic characteristics reported by children included **race/ethnicity** (measured with two dummy variables representing White and Hispanic youth compared to children from African American/Other backgrounds because only the former had sufficient representation in the sample), **family structure** (a dichotomous variable comparing those living with two parents with other family types), and **transitions and mobility** (based on four items measuring

¹Lifetime and past-month substance use were combined in order to increase the variability and decrease the skewness of the dependent variable. Although this measure makes the temporal ordering between parenting practices and adolescent drug use more difficult to ascertain, the current measure is highly correlated ($r=0.98$) with a measure that included only past-month drug use; thus, the substantive findings would be similar regardless of the measure selected.

changes in children's homes and schools which were standardized and then averaged). **Early onset of drug use and delinquency** (two variables) were based on students' reports of the age at which they first used illegal substances (smoking, drinking alcohol, drinking alcohol regularly, and smoking marijuana) or committed a delinquent act (joining a gang, attacking someone, carrying a handgun, getting arrested, and being suspended from school). For each act, students were dichotomized to compare those who reported deviance prior to age 11 versus abstainers or those whose deviance occurred for the first time when aged 12 or older. The early onset variables represent counts of the number of acts committed prior to age 11.

Two community risk factors were also included as covariates; for both variables, survey items were standardized and then averaged. **Community disorganization** was based on 5 items assessing the degree to which students perceived their neighborhoods to be unsafe or marked by crime and signs of disorder (e.g., drug selling, fights, graffiti, and empty buildings). **Community laws and norms favorable to offending** measured children's beliefs that they would be caught by police if they were delinquent (three items) and that adults in their neighborhood thought it was wrong for children their age to use drugs (three items). These six items were reverse coded so that higher values indicated laws/norms that encouraged deviance.

Given that the primary focus of this paper was to examine the relationship between parenting practices and offending, covariates were selected that were hypothesized to affect both parenting practices and children's outcomes (e.g., family structure and the community variables). Children's early onset of offending was selected to represent prior offending, which was important given the use of cross-sectional data and because children's behavior has been shown to affect parenting practices.

Data Analysis

Figure 1 shows the model used to evaluate the overall effects of family risk on delinquency and drug use by grade and sex (Research Question 2) and differences in the contributions of the six parenting practices to family risk (Research Question 3). Multigroup structural equation models (SEM) were used for all analyses and were run using Mplus Version 5.2 (Muthén & Muthén, 2006). A mean/variance adjusted weighted least squares estimator (WLSMV) appropriate for ordinal data (Flora & Curran, 2004) was used. All observed variables, including substance use and delinquency measures, were treated as ordinal. Missing data were addressed with Full Information Maximum Likelihood (FIML). FIML does not allow for missing data on exogenous variables, so the 392 students with missing data on sex, the 11 students with missing data on grade level, and students missing data on the covariates (1,659 students in Grade 6, 1,478 in Grade 8, 717 in Grade 10, and 534 in Grade 12) were excluded from analyses. Because the sampling frame was communities and there was some dependency among students within communities, analyses were run using a sandwich estimator to provide standard errors adjusted for clustering (Asparouhov, 2006).

The six parenting practices and the dependent variables were each treated as first-order factors (see Figure 1) with indicators based on the survey items. Initial analyses suggested that the residuals be allowed to correlate for past-month alcohol use and binge drinking, and for stealing something worth more than five dollars and taking something from a store. The scales of the latent variables were fixed by setting the variance to 1 rather than by fixing a particular factor loading, so that regression weights could be interpreted as standardized weights.

In order for each of the parenting practices to be comparable between groups, the measurement model had to be invariant across sex and grade (Meredith, 1993; Vandenberg & Lance, 2000). As in previous work (Glaser et al., 2005), the model fit indices and

residuals in the current analyses demonstrated invariance of the six parenting practices. A model testing measurement invariance of the delinquency and drug use factors showed good fit when constraining factor loadings and item thresholds ($\chi^2 = 140$, $df = 33$, $TLI = .997$, $RMSEA = .027$). Although a chi-square difference test between the constrained and unconstrained models showed that the unconstrained model fit significantly better ($\Delta\chi^2 = 71$, $df = 21$), an examination of model residuals and parameters found that the only substantial differences were in thresholds for substance use variables, which decreased as grade increased. Given the overall good fit of the model, invariance in the measurement of all first-order constructs was imposed, as was equality in the two residual correlations.

In structural equation modeling using emergent variables, the model is only identified when used to predict other variables; in this case, delinquency and substance use (MacCallum & Browne, 1993). The effects of the six parenting practices on family risk (paths A-F in Figure 1) measure the contribution of each practice to the composite variable (Bollen & Lennox, 1991; Bollen & Davis, 1994). Differences in the weights indicate differences between groups (i.e., sex and grade) in the relative contribution of that practice to the overall measure of family risk. In these analyses, the scale of the emergent variable was fixed by setting its regression weight on substance use to 1 (Bollen & Lennox, 1991), or by setting the effects of one of the predictors to 1, depending on the parameter of interest.

Tests of differences between boys and girls and across grades utilized multiple group models. Chi-square difference tests compared models in which each effect was constrained to be the same across groups and models in which effects were allowed to freely vary between groups.

Results

Gender and Grade Differences in Mean Differences of Parenting Practices

The first research question examined gender and grade differences in mean levels of reported parenting practices. Table 2 shows mean differences in the parenting practices and in the dependent variables in standard deviation units between females and males (the reference group) at each grade level. The findings showed gender differences in mean levels, but the results did not consistently favor boys or girls. Compared to boys, girls in the same grade reported significantly ($p < .05$) lower rates of poor family management, less parental acceptance of delinquency and drug use, and greater maternal attachment (in 12th grade only). However, girls also reported more family conflict and less attachment to fathers. There were no significant gender differences in parental reinforcement of prosocial behavior. The effect sizes of most of the gender differences were small, but the pattern of effects was generally consistent across all four grades. For the dependent variables, girls reported significantly lower levels of delinquency than boys in all grades, but the two sexes had similar levels of substance use within each grade.

Grade differences were examined using the combined sample of males and females. The results in Table 3 indicated significant ($p < .05$) and relatively large differences between 6th grade (the reference group) and 8th, 10th, and 12th grades in mean levels of all parenting practices and in self-reported delinquency and drug use. In all cases, children in more advanced grades reported worse parenting practices and greater levels of drug use and delinquency compared to children in Grade 6. There were steady increases in poor family management from Grades 6 through 12, indicating that high school students, particularly 12th graders, perceived their parents to be more lax in monitoring behavior and enforcing rules compared to children in middle school. While the other parenting behaviors also indicated a less healthy family environment for older versus younger students, the greatest mean differences tended to be for students in Grade 10 (versus Grade 6), not Grade 12,

which suggests that parent/child relationships may be less contentious as children prepare to leave the home than when they are in the middle of high school.

Regarding the dependent variables, significantly more delinquency (approximately a half standard deviation unit) was reported in each of the older grades compared to 6th grade; however, the differences were similarly high at 8th and 10th grade compared to 6th grade and slightly less for 12th grade. Grade differences in substance use were larger than for delinquency and were greatest at Grade 12, when students reported nearly 1.5 standard deviation units more substance use than students in Grade 6.

These results indicated that both gender and grade differences in mean levels of parenting practices. Gender differences tended to have small effect sizes and did not consistently favor boys or girls, although when identified, gender differences were stable across grades. Females generally reported greater parental monitoring and attachment to mothers, while males reported less family conflict and more attachment to fathers. Stronger and more consistent effects were found for grade differences, with older children reporting worse parenting practices compared to younger children.

Gender Differences in the Relationship Between Family Risk and Delinquency and Substance Use

The second and third research questions examined gender and age differences in the combined effects of family risk on problem behaviors (RQ2) and in the contributions of each parenting practice to the overall measure of family risk (RQ3). Table 4 presents the results assessing gender differences in these relationships for each grade, controlling for demographic, individual, and community factors².

The relationship between gender, family risk, delinquency and substance use at each grade is shown in the top half of Table 4. Omnibus tests found no significant gender differences at any grade in the overall relationship between family risk and either outcome. Family risk was significantly, positively, and similarly related to delinquency and substance use for males and females at all grade levels.

The results in the bottom half of Table 4 assessed gender differences in the contributions of individual parenting practices to family risk at each grade. The omnibus chi-square difference tests showed significant gender differences in the composition of the family risk variable in Grades 6 and 10, indicating that males and females differed in the extent to which each of the six parenting practices affected the overall measure of family risk. The individual tests assessing gender differences in the contributions of each parenting practice to family risk show that in 6th grade, the make-up of family risk differed for girls and boys. Five of the six chi-square tests were significant, indicating that poor family management and maternal attachment were more strongly related to family risk for girls compared to boys, while family conflict, parental acceptance of delinquency and drug use, and paternal attachment were more strongly related for boys. In 10th grade, poor family management was again more strongly related to family risk for girls versus boys, and parental acceptance of delinquency and drug use was again more strongly related to family risk for boys than girls, as was maternal attachment. It should also be noted that in a few cases, maternal and paternal attachment were significantly and *positively* related to family risk; that is, they were associated with increased delinquency and drug use, which was not anticipated.

While some gender differences were found, there were more gender similarities than differences in the contributions of individual parenting practices to family risk. Across all

²For greater ease of interpretation of the main results, the results for the control variables are given in Appendix A.

grades, poor family management and parental acceptance of delinquency and drug use significantly contributed to family risk for both girls and boys, while parental attachment and parent reinforcement of prosocial behavior were typically not significant and thus did not affect family risk for either sex. Also, there were no significant gender differences in the overall contribution of parenting practices to family risk in Grades 8 and 12; in these grades, with only two exceptions, the same practices were significantly related to family risk for boys and girls.

In summary, these findings indicated that the composite measure of family risk was similar for both sexes in Grades 8 and 12, somewhat different for boys and girls in Grade 10, and clearly different for students in Grade 6. At this age, family risk was influenced by a different constellation of parenting practices for boys and girls.

Grade Differences in the Relationship Between Family Risk and Delinquency and Substance Use

Given the similarities in family risk for the majority of students, grade differences in the relationship between family risk and outcomes were assessed using the combined sample of males and females, as shown in Table 53. The results in the top half of Table 5 indicated significant grade differences in the overall relationship between family risk and each dependent variable. However, the differences were more a function of large power for the structural parameters than they were indicative of substantive differences in the effects of families on substance use across grades, as evidenced in the roughly similar parameters across grades in the relationship between family risk and outcomes (with the exception of delinquency in 12th grade). Family risk was significantly associated with increased delinquency and drug use in each grade, including the last year of high school, even controlling for other risk factors for problem behaviors.

The outcomes shown in the bottom half of Table 5 indicated that poor family management, family conflict, and parental acceptance of delinquency and drug use made significant and consistent contributions to family risk (with the exception of family conflict in Grade 12). These variables increased family risk as expected and thus were associated with increased delinquency and substance use among middle and high school students. Paternal and maternal attachment did not significantly contribute to family risk in any grade, and parental reinforcement of prosocial behavior was significant in 8th grade and 12th grades, although in the opposite direction than anticipated (associated with *increased* family risk).

Three of the six omnibus chi-square tests indicated significant ($p < .05$) grade difference in the contributions of parenting practices to family risk. The contribution of poor family management to family risk significantly decreased across grades, although the magnitude of change was not large. Family conflict was also more weakly related to family risk for older students, and it did not significantly contribute to family risk in 12th grade. In contrast, the contribution of parental acceptance of delinquency and drug use to family risk was significantly greater among high school than middle school students. The other three parenting practices showed somewhat stable (and largely non-significant) contributions to family risk across the grades.

Discussion

While both criminological theories and empirical research recognize the family as an important influence on behavior (Cernkovich & Giordano, 1987; Hawkins et al., 1998;

³As with Table 4, the results shown in Table 5 were generated controlling for the covariates, and the coefficients for the covariates are given in Appendix A.

Hirschi, 1969; Loeber & Dishion, 1983; Sampson & Laub, 1993), there has been considerable debate regarding the extent to which parenting practices equally affect males and females and children of different ages. The goal of the current study was to begin to unpack the 'black box' of the family environment, to identify more clearly how parents interact with and influence the offending of their sons and daughters and how these relationships differ depending on the age of the child. Overall, the findings demonstrated age and gender differences in the degree to which parents monitor and support their children, and both generalizability and complexity in the effects of parenting practices on delinquency and substance use. The results supported the vast body of literature identifying the family as an important influence on adolescent offending, differed from much lifecourse theory research by demonstrating that the family influence persists through high school, and extended prior research by suggesting that particular parenting practices vary in their contribution to family risk by age and gender.

In this study, family risk (i.e., less supervision and monitoring, more family conflict, parental attitudes favorable to offending, and weak parent/child attachment) was associated with greater involvement in delinquency and drug use even controlling for other individual and community variables related to offending. The relationship between parenting and offending was significant for both girls and boys and for children in middle and high school, even 12th grade students, who also reported fewer parental restrictions and were likely preparing to leave the home. Across gender and age groups, family management, family conflict, and parental acceptance of delinquency and drug use contributed most strongly to family risk, while parental attachment and reinforcement of prosocial behavior did not. While some prior studies have also found direct forms of parental control more influential than indirect or expressive forms such as parental attachment (Burton et al., 1995), other studies have not (Mack, Leiber, Featherstone, & Monserud, 2007; Wright & Cullen, 2001), and many investigations have not examined gender differences in these relationships.

The results were somewhat consistent with lifecourse developmental theory, which contends that parents of teenaged children are more disengaged, place fewer restrictions on children's behavior, interact with them less frequently, and offer them less support compared to parents of middle school children (Dishion et al., 2004). Indeed, in this study, high school children reported less family management, worse family conflict, more parental acceptance of delinquency and drug use, and weaker attachment to parents compared to children in middle school. Consistent with some other research, including studies relying on longitudinal data (Bronte-Tinkew et al., 2006; McGue et al., 2005; Simons et al., 2001), there were no cases in which mean levels of parenting practices indicated a healthier family environment for older versus younger children. However, the findings only partially supported the lifecourse hypothesis that the *effects* of parenting on offending decline in importance or become non-significant during adolescence (Jang & Krohn, 1995; Patterson et al., 1989; Thornberry et al., 1991). Family risk was related to outcomes at each grade, and even though the relationships differed by age, the size of the associations between family risk, drug use and delinquency was similar at each grade.

Like some past research, our findings demonstrated that parents treated boys and girls differently (Bottcher, 1995; Hill & Atkinson, 1988; Keenan & Shaw, 1997), but in contrast to some assertions, girls did not always experience better parenting practices. Girls generally reported more parental monitoring and greater attachment to mothers, but also more family conflict and weaker attachment to fathers. These differences were fairly stable across age groups, which further supports that socialization is a gendered process. The combined measure of family risk was associated with more offending for both sexes, which is consistent with some, but not all, prior research (Fagan et al., 2007; Fergusson & Horwood, 2002; Kruttschnitt & Giordano, 2009; Moffitt et al., 2001; Rowe et al., 1995; Scaramella et

al., 1999; Smith & Paternoster, 1987). However, different parenting practices contributed to family risk for girls and boys at Grade 6, which indicates the importance of studying multiple parenting practices and their relative effects on outcomes in order to fully understand the family environment, which much prior research has failed to do.

Implications for Prevention Practices

The findings from this study can be used to inform the development of family-focused prevention programs. While many such interventions have been demonstrated effective in reducing children's drug use and delinquency (Kumpfer & Alvarado, 2003; Sherman, Gottfredson, MacKenzie et al., 1997; U.S. Department of Health and Human Services, 2001), the majority of these programs focus on parents of elementary and middle school children. Our study, however, indicated that family risk factors were elevated and protective factors depressed for high school versus middle school students, parenting practices were significantly related to offending through 12th grade, and rates of drug use and delinquency were elevated among the oldest students in the sample. These findings emphasize the need for further development and evaluation of programs for parents and children in high school. Such programs can encourage parents to remain involved in their children's lives and remind them doing so can have a positive impact on their high school children's behaviors.

Most family-focused programs attempt to change a variety of parenting practices related to the family environment (Kumpfer & Alvarado, 2003; Sherman et al., 1997; U.S. Department of Health and Human Services, 2001). The current findings suggest that programs may need to narrow their scope. We found that for most children, family management, family conflict, and parental acceptance of delinquency and drug use contributed most strongly to family risk, while parental attachment did not. Thus, family programs may be most efficient and effective when focused on helping parents monitor children's behavior, set and reinforce rules for behavior, clearly communicate to children that involvement in substance use and delinquency will not be tolerated, and minimize arguments and yelling within the family. Emphasis on these particular practices may need to be somewhat adjusted, however, depending on the age and gender of the child. Our study, for example, found that different factors contributed to family risk in Grade 6 for boys and girls, the contribution of family conflict to family risk was significantly less for high school than middle school students, and parental acceptance of delinquency and drug use contributed more strongly to family risk for older than younger students.

Although much research has investigated age or gender differences in the effects of families on offending, our investigation has extended this field by examining the ways in which age, gender, and parenting practices interact to affect substance use and delinquency. Data were obtained from students in four grades (Grades 6, 8, 10, and 12) covering the span of adolescence, and the sample was geographically diverse and large enough to detect gender differences if present. Information on six parenting practices was collected using multiple items on the CTC Youth Survey. Finally, the emergent model provided a more complete picture of the family environment by allowing examination of age and gender differences in both the *overall* influence of the family on offending and the *relative* contribution of individual parenting practices to family risk.

While the current study provided insight into the etiology and prevention of drug use and delinquency, methodological limitations must be noted. The analyses included a limited number of control variables, and other important predictors of delinquency and drug use, such as peer and school factors, were not included in the analysis. Secondly, the cross-sectional data limits our ability to determine causal relationships between parenting practices and children's outcomes, and our findings may reflect cohort differences rather than developmental differences. We also cannot rule out the existence of reciprocal effects,

whereby children's behaviors affect parenting practices, which have been demonstrated in other research (Sheehan & Watson, 2008; Thornberry et al., 1991). Third, the analyses relied on children's reports of their parents' behaviors and attitudes, and reports from parents would provide an additional viewpoint regarding the family environment. Finally, while the sample was large and geographically diverse, it was restricted to youth from small- to medium-sized communities located in rural and suburban areas, and results cannot be generalized to youth in urban environments. Similarly, the survey was administered in public schools and could have missed children who had dropped out of school or who were chronically truant, as well as those in private schools or who were home-schooled. Further investigation of the complex processes whereby parents affect children's development is warranted, particularly studies that rely on longitudinal data, simultaneously assess age and gender differences in the effects of family processes, and examine reciprocal effects between child and parent behaviors.

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Appendix A

Results for Covariates Included in Tables 4 and 5

Covariates	TABLE 4 RESULTS ¹								Table 5 Results ²	
	Grade 6		Grade 8		Grade 10		Grade 12		Del	Drugs
	Del	Drugs	Del	Drugs	Del	Drugs	Del	Drugs		
Two parent household	-0.13	-0.15	-0.09	-0.21	-0.15	-0.14	-0.02	-0.17	-0.09	-0.21
Transitions and mobility	0.09	0.07	0.11	0.10	0.14	0.02	0.10	0.09	0.10	0.07
Laws/norms favoring delinquency	0.18	0.23	0.24	0.32	0.21	0.32	0.21	0.35	0.22	0.32
Community disorganization	0.16	0.16	0.19	0.14	0.14	0.04	0.18	0.03	0.16	0.08
Early onset of drug use	0.25	0.40	0.23	0.36	0.14	0.30	0.17	0.29	0.20	0.35
Early onset of delinquency	0.19	0.13	0.20	0.07	0.18	0.09	0.13	0.01	0.17	0.06
White (vs. Other)	-0.18	-0.08	-0.23	-0.02	-0.07	0.02	-0.13	0.03	-0.22	0.00
Hispanic (vs. Other)	-0.03	0.16	-0.03	0.16	-0.03	0.05	0.02	0.26	-0.01	0.18

Note: All regression weights are standardized and those significantly ($p < .05$) different from zero are indicated in **bold**.

¹The standardized regression weights differ slightly for females and males due to differences in variances; the results reported here are for males, but there are no substantive differences between the groups.

²The standardized regression weights differ slightly between grades due to differences in standard deviations; the results reported here are for 10th grade students, but there are no substantive differences between grades. For dichotomous covariates (two parent household and race/ethnicity), only the outcome is standardized and the effects can be interpreted as Cohen's D.

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Figure 1.

Emergent Variable Model for the Effects of Family Risk on Delinquency and Substance Use

Note: All parameters not labeled with a letter were held constant across groups. Group differences in parameter estimates are reported in Tables 4 and 5.

Table 1
Demographic Characteristics and Participation Rates of Students Completing the
Communities That Care Youth Survey

Grade (Mean age)	Number of Students	Percentage of Eligible School Population	Sex	Race/Ethnicity
6 (11.65 years)	5206	86.7%	50% female	69% White 14% Hispanic 4% African American 14% Other
8 (13.64 years)	5105	85.3%	51% female	73% White 13% Hispanic 4% African American 11% Other
10 (15.68 years)	4572	78.1%	53% female	77% White 10% Hispanic 3% African American 9% Other
12 (17.58 years)	3629	75.8%	49% female	80% White 10% Hispanic 3% African American 8% Other

Table 2
Gender Differences in Mean Levels of Parenting Practices, Delinquency, and Substance Use for Females Compared to Males

Variable	6th Grade		8th Grade		10th Grade		12th Grade	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE
Poor family management	-0.25	0.06	-0.20	0.06	-0.32	0.07	-0.48	0.07
Family conflict	0.08	0.04	0.17	0.06	0.23	0.04	0.20	0.04
Parental acceptance of deviance	-0.09	0.08	-0.23	0.09	-0.22	0.09	-0.30	0.10
Maternal attachment	0.04	0.06	0.07	0.05	0.09	0.05	0.23	0.06
Paternal attachment	-0.24	0.08	-0.20	0.06	-0.21	0.06	-0.11	0.07
Rewards for prosocial behavior	0.04	0.04	0.00	0.07	0.04	0.05	0.10	0.06
Delinquency	-0.39	0.07	-0.27	0.09	-0.42	0.10	-0.66	0.11
Substance use	-0.07	0.08	-0.02	0.09	-0.10	0.10	-0.18	0.13

Note: Mean differences are in standard deviation units that separate girls from boys (the reference group) at each grade; significant ($p < .05$) gender differences are in **bold**.

Number of participants: Grade 6: 2516 boys, 2575 girls; Grade 8: 2435 boys, 2586 girls; Grade 10: 2098 boys, 2375 girls; Grade 12: 1787 boys, 1748 girls.

Table 3
Grade Differences in Mean Levels of Parenting Practices, Delinquency, and Substance Use

Variable	8th Grade		10th Grade		12th Grade	
	Mean	SE	Mean	SE	Mean	SE
Poor family management	0.45	0.05	0.73	0.05	0.95	0.05
Family conflict	0.27	0.05	0.35	0.04	0.21	0.03
Parental acceptance of deviance	0.50	0.06	0.57	0.06	0.58	0.06
Maternal attachment	-0.48	0.04	-0.61	0.04	-0.56	0.04
Paternal attachment	-0.35	0.05	-0.52	0.05	-0.48	0.05
Rewards for prosocial behavior	-0.34	0.05	-0.48	0.03	-0.39	0.04
Delinquency	0.54	0.06	0.56	0.06	0.39	0.06
Substance use	0.85	0.08	1.29	0.07	1.45	0.08

Note: Mean differences are in standard deviation units that separate each grade from Grade 6th (the reference group, N=5206); significant ($p < .05$) grade differences are in **bold**.

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Table 5

Grade Differences in the Relationship Between Family Risk and Delinquency and Substance Use (N=14,124)

Variable	Parameter (Figure 1)	6 th (N=3547)	8 th (N=3627)	10 th (N=3855)	12 th (N=3095)	χ^2	p
		β	β	β	β		
EFFECT OF FAMILY RISK ON PROBLEM BEHAVIORS [$\chi^2 = 25.62(6)$, $P=.00$]							
Delinquency	G	0.44	0.44	0.44	0.33	17.13	0.00
Substance use	H	0.39	0.43	0.42	0.39	8.93	0.03
CONTRIBUTIONS OF PARENTING PRACTICES TO FAMILY RISK [$\chi^2 =41.28(14)$, $P=.00$]							
Poor family management	A	0.62	0.61	0.58	0.59	7.95	0.05
Family conflict	B	0.31	0.16	0.12	-0.01	20.52	0.00
Parental acceptance of delinquency	C	0.49	0.53	0.63	0.64	7.75	0.05
Maternal attachment	D	0.04	0.01	0.03	-0.06	1.41	0.70
Paternal attachment	E	0.06	-0.05	0.03	0.23	2.73	0.44
Rewards for prosocial behavior	F	0.06	0.15	0.07	0.14	1.20	0.75

Note: All parameters are standardized and are controlling for the effects variables shown in Appendix A on substance use and delinquency; those significantly ($p < .05$) different from zero are indicated in **bold**. χ^2 difference tests (with 3 df) indicate whether the contribution of each parenting practices to the Family Risk composite variable is different across grades.