Ethnic Differences in the Effect of Parenting on Gang Involvement and Gang Delinquency: A Longitudinal, Hierarchical Linear Modeling Perspective

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This study examined the relative influence of peer and parenting behavior on changes in adolescent gang involvement and gang-related delinquency. An ethnically diverse sample of 300 ninth-grade students was recruited and assessed on eight occasions during the school year. Analyses were conducted using hierarchical linear modeling. Results indicated that, in general, adolescents decreased their level of gang involvement over the course of the school year, whereas the average level of gang delinquency remained constant over time. As predicted, adolescent gang involvement and gang-related delinquency were most strongly predicted by peer gang involvement and peer gang delinquency, respectively. Nevertheless, parenting behavior continued to significantly predict change in both gang involvement and gang delinquency, even after controlling for peer behavior. A significant interaction between parenting and ethnic and cultural heritage found the effect of parenting to be particularly salient for Black students, for whom higher levels of behavioral control and lower levels of lax parental control were related to better behavioral outcomes over time, whereas higher levels of psychological control predicted worse behavioral outcomes.

INTRODUCTION

During the past 2 decades the United States has experienced a dramatic surge in the number of adolescents involved in gangs. A national survey of law enforcement agencies indicated that in 1996 there were an estimated 31,000 gangs with approximately 846,000 members (National Youth Gang Center, 1997). Given that this estimate includes only gangs and gang members who have come to the attention of officials, the actual occurrence of gang membership is thought to be much higher.

The significance of these numbers, however, is indicated not simply by their magnitude but by the increased risk of antisocial behavior associated with gang membership. The fact that gang-involved youth are much more likely than noninvolved youth to engage in delinquent and criminal behavior is one of the most indisputable findings in criminological research. Not only do gang members have higher rates of criminal activity than nonmembers, but they account for a disproportionate amount of juvenile crime. For example, in a study of high school students and dropouts in San Diego, Los Angeles, and Chicago, gang members constituted 23% of the sample but accounted for 67% of felony assaults, 72% of felony thefts, 53% of weapons offenses, 59% of alcohol use, and 55% of drug use (Fagan, 1990). Similar results have been reported in samples from New York, Colorado, and Seattle (Thornberry, 1998). The relation between gang involvement and delinquency has been replicated in numerous studies, regardless of urban or suburban location, school-based or detention-based samples, and use of self-report surveys versus official arrest records. Moreover, the relation remained significant even after controlling for factors such as exposure to deviant peers, poverty, parental supervision, and school commitment (Battin, Hill, Abbott, Catalano, & Hawkins, 1998; Thornberry, 1998).

Gang membership appears to be related not just to delinquency but also to general adolescent problem behavior. For example, gang membership among Black females has been associated with earlier onset of sexual activity, greater number of sexual partners, and lower frequency of condom use (Harper & Robinson, 1999). Additionally, although there has been no published data on the long-term effects of gang membership, it is conceivable that gang members are at greater risk for adolescent parenthood, school failure and dropout, incarceration, and low occupational status. Moreover, given that the very nature of being a gang member makes one a potential target for rival gangs, gang members may be at greater risk of being victims of violent crime.

The increase in the number of youth in gangs has been accompanied by an increase in scientific and public policy interest in examining causes and correlates of gang membership. Although researchers have identified a multitude of potential risk factors for youth gang involvement (Howell, 1998), much of the work in this area is based on ethnographic rather than empirical studies. Furthermore, much of the empiri-
The research that has been conducted has focused on community-level risk factors such as poverty and social disorganization (e.g., Elliott et al., 1996; Friedman, Mann, & Friedman, 1975; Tatum, 1996) or individual-level risk factors such as self-esteem and attitudes toward delinquency (e.g., Esbensen et al., 1993; Winfree, Backstrom, & Mays, 1994). Less emphasis has been placed on risk factors that exist within family and peer networks. Therefore, as outlined below, the purpose of this study was to examine the relative influence of peer and parenting behavior on changes in adolescent gang involvement and gang-related delinquency over the course of an academic year.

**Effect of Peer Behavior on Youth Gang Involvement**

Research on risk factors for adolescent problem behavior has consistently highlighted the important role of the peer group. Exposure to delinquent peers, in particular, has been shown to be one of the strongest predictors of adolescent delinquency (e.g., Aseltine, 1995; Blaske, Borduin, Henggeler, & Mann, 1989; Elliott, Huizinga, & Ageton, 1985; Keenan, Loeb, Zhang, Stouthamer-Loeb, & Van Kammenn, 1995; Mason, Cauce, Gonzales, & Hiraga, 1994; Sampson & Laub, 1993; Smith, Visher, & Jarjoura, 1991). There has been some suggestion that involvement with delinquent peers is a necessary step on the path to delinquency, and that adolescents who do not have delinquent friends have little risk of becoming involved in criminal or other types of problem behavior (Elliott et al., 1985; Mason et al., 1994). For example, in their re-analysis of data from Glueck and Glueck's (1950) study of juvenile delinquency, Sampson and Laub (1993) found that 98% of the delinquents in their sample had delinquent friends, compared with only 7% of the nondelinquents.

Nonetheless, in spite of the well-documented association between problem peers and juvenile delinquency, few studies have actually examined the role of peer behavior as it relates to youth gang membership. Indeed, in a comprehensive review of research on youth gangs, Howell (1998) recorded only one study that addressed the effect of peer gang involvement. That study, conducted by Curry and Spergel (1992), found that having gang-involved peers was significantly related to gang membership among Black males but not among Hispanic males. There is also some indication that peer delinquency, in general, may significantly affect adolescent gang membership (e.g., Esbensen et al., 1993; Winfree, Backstrom, & Mays, 1994). For example, using data from the Rochester Youth Development Study, a longitudinal study of delinquency and substance use among urban youth, Bjerregaard and Smith (1993) found that peer delinquency was a strong predictor of male and female gang involvement 6 months later. Similar findings have been reported using data from the Pittsburgh Youth Study (Lahey, Gordon, Loeb, Stouthamer-Loeb, & Farrington, 1999) and the Seattle Social Development Project (Hill, Howell, Hawkins, & Battin-Pearson, 1999). Other investigators have found that the most common reasons for joining gangs—reported during interviews with gang members or at-risk youth—are pressure from friends to join gangs and the desire for companionship or a sense of belonging (Brown, 1977; Friedman et al., 1975; Hochhaus & Sousa, 1988; Walker-Barnes & Mason, 2001).

**Effect of Parenting on Youth Gang Involvement**

There has been a great deal of speculation that gang membership is the result of deficient family relationships. In part, this is prompted by studies that have shown parenting behavior—particularly poor supervision and monitoring, inappropriate use of control, and a negative emotional relationship between the parent and child—to be broadly related to general delinquent or problem behavior (e.g., Blaske et al., 1989; Cernkovich & Giordano, 1987; DiLalla, Mitchell, Arthur, & Pagliocca, 1988; Keenan et al., 1995; Laub & Sampson, 1988; Mason et al., 1994; Mason, Cauce, Gonzales, & Hiraga, 1996; Peeples & Loeb, 1994; Sampson & Laub, 1993; Shields & Clark, 1995; Steinberg, 1987a; Van Voorhis, Cullen, Mathers, & Garner, 1988). Ethnographic and observational studies of gang members have commonly portrayed the families of gang-involved youth as lacking appropriate family management practices and having distant and conflictual relationships among family members (Belitz & Valdez, 1994; Campbell, 1990; Moore, 1991; Vigil, 1988). Specifically, it has been suggested that for some youth gangs may serve as a substitute family, providing the emotional support that is not available from the family.

Although most of this work has been strictly theoretical, there does exist limited empirical evidence that supports the role of the family environment in adolescent gang membership. Studies that have been conducted provide some support for the hypothesis that the family environment exerts a significant influence on youth gang membership. For example, in a study of 536 adjudicated Black and White males, Friedman and colleagues (1975) found that gang members reported higher levels of overt and aggressive acts of rebellion against their parents. Specifically, gang members were more likely to have shouted...
at, cursed at, and struck their parents. Furthermore, when asked to describe the three most important people in their life, gang members were significantly more likely to exclude their mothers than were youth who were not involved in gangs, a finding indicative of poor mother–child relationships. Similar findings were reported in a study of the family relations of 30 Mexican American males (Adler, Ovando, & Hocevar, 1984), which found that the family members of gang-involved youth were less likely to engage in social activities together (e.g., eating meals, family outings), less likely to express positive feelings toward one another, and more likely to express negative feelings. In addition, mothers of gang members reported that discipline was inconsistent and likely to be enforced by only one parent. Using data from over 11,000 high school students, Dukes and colleagues (1997) demonstrated that gang members reported less emotional closeness to their families than did nongang members.

Although much of this research has been cross-sectional, there is also evidence from a number of longitudinal studies that indicates that family dysfunction precedes gang membership. For example, longitudinal data from the Pittsburg Youth Study indicated that among Black males, lack of appropriate parental supervision during seventh grade predicted entry into a gang by age 15 (Lahey et al., 1999). Data from the Seattle Social Development Project have also highlighted family management practices as a predictor of involvement in gangs (Hill et al., 1999). Similar findings have been reported using data from the Rochester Youth Development Study, which indicated that family factors associated with youth gang membership include low parent–adolescent attachment and poor parental supervision (Thornberry, 1998). The effect of attachment to parents has been found to be particularly pronounced among females (Esbensen, Deschenes, & Winfree, 1999).

Nevertheless, the view that family dysfunction contributes to gang membership has not gained universal acceptance. Contrary to the above findings, Bowker and Klein (1983) provided evidence that among Black females, gang members were no more likely than nongang members to have poor relationships with their parents. A study of family relationships among male juvenile offenders found no significant differences between the family relationships, mother–adolescent relationships, or father–adolescent relationships of gang members and nongang-involved youth (Lyon, Henggeler, & Hall, 1992). Similarly, Jankowski (1991) reported that gang members were just as likely to come from intact nuclear families as “broken” homes, and, in fact, found that many gang members reported having close relationships with their families.

**Ethnic Differences in the Effect of Parenting**

To some degree, the inconsistencies in research examining the influence of parenting on gang involvement may reflect the fact that the effect of the family environment may be different for adolescents from different ethnic backgrounds. For example, although youth with a family member involved in gangs are at increased risk for gang involvement themselves, this effect may be greater among Black youth than Hispanic youth (Curry & Spergel, 1992). Although this finding does not specifically address the role of family relationships or parenting practices (nor has it been corroborated by other research on gang involvement), it has been supported by research that has found ethnic differences in the effect of parenting behavior on more general forms of delinquency or problem behavior. Several investigators have reported findings that authoritarian parenting style, which has been associated with negative adolescent adjustment among samples consisting primarily of White males, may be related to better behavioral outcomes among ethnic minority youth (e.g., Magnus, Cowen, Wyman, Fagen, & Work, 1999). This effect appears to be particularly pronounced and most consistent among Black youth (e.g., Cernkovich & Giordano, 1987). For example, unilateral parent decision making, which may be conceptualized as a form of authoritarian parenting, has been demonstrated to be related to decreased involvement in deviant activity 1 year later among Black youth but unrelated to behavioral problems among Hispanic youth. Moreover, unilateral parent decision making predicted lower psychosocial development (i.e., self-esteem, self-reliance, and work orientation) among White youth (Lamborn, Dornbusch, & Steinberg, 1996).

Much of the research that examined ethnic differences in the effect of parenting on adolescent behavior problems focused on authoritarian parenting or related constructs. Many researchers provided evidence that parental behavioral control, which involves supervision and monitoring of behavior, was negatively related to delinquency among Hispanic and Black youth (e.g., Forehand, Miller, Dutra, & Chance, 1997; Lamborn et al., 1996). There is growing evidence, however, that other aspects of parenting and family functioning may differentially affect adolescents from different ethnic backgrounds. For example, Smith and Krohn (1995) found that whereas parental control predicted lower delinquency among White and Black youth, parental involvement pre-
dicted lower delinquency among Hispanic adolescents. Furthermore, moderate levels of psychological control, a coercive, guilt-based control typically viewed as inappropriate parenting, have been linked to reduced behavioral problems among Black youth who associate with delinquent peers (Mason et al., 1996). Data from the Chicago Youth Development Study, a longitudinal study of inner-city Black and Latino males, indicates that in addition to parental discipline and supervision, family structure, cohesion, and having strong beliefs about the importance of family predicted lower involvement in delinquent activity and violence (Gorman-Smith, Tolan, & Henry, 2000; Gorman-Smith, Tolan, Zelli, & Huesmann, 1996). Overall, these findings suggest that to properly understand the effect of parenting, researchers may need to examine the interaction between parenting and ethnicity.

A common explanation offered for ethnic differences in the effect of parental control has been that authoritarian parenting protects ethnic minority youth from the negative community influences found in the poorer and more dangerous neighborhoods in which these youth often live (e.g., Baldwin, Baldwin, & Cole, 1993; Forehand & Kotchick, 1996; McLoyd, 1998). When controlling for community context, however, Lamborn and colleagues (1996) found that ethnic differences in the effect of parenting on adolescent adjustment transcended the effect of community context. An alternative explanation for the differential effects of parenting has been that there are cultural differences in the meaning of parenting behavior. For example, Black youth have been found to report more positive emotions in response to parental control behaviors (i.e., higher feelings of concern and caring by their parents, lower feelings of anger and manipulation) than White/non-Hispanic youth (Mason, Walker-Barnes, Tu, & Simons, 2000). One explanation is that among White youth, high parental control may be seen as intrusive and inappropriate and may, therefore, restrict psychosocial development. In contrast, parental control among Black families is thought to be important for the development of obedience and respect, which are highly valued qualities. Therefore, Black youth may expect high parental control and interpret it as a sign of parental concern. Among Hispanic families, on the other hand, the quality of relationships within the extended family network is valued more highly than individual achievement or behavior. As a result, parenting tends to emphasize parent–child involvement rather than strict adherence to discipline (Forehand & Kotchick, 1996; Lamborn et al., 1996; Smith & Krohn, 1995).

Joint Effects of Peers and Parenting

Given the relative paucity of empirical research examining the effect of peer and parenting behavior on adolescent gang involvement, it may not be surprising that little research has analyzed the concurrent effects of these social networks. One notable exception is the previously described study by Bjerregaard and Smith (1993), which found that parent–adolescent attachment and parental supervision exerted no effect on gang involvement after controlling for the significant effect of peer delinquency. Nevertheless, there is a large body of theoretical and empirical literature that lends credence to the hypothesis that both peer and parenting behavior exert unique influences on adolescent gang involvement. The social interactional model developed by Patterson and colleagues (e.g., Patterson, 1982; Patterson, DeBaryshe, & Ramsey, 1989) proposes that poor family management practices during preadolescence result in an increase in antisocial and disruptive behavior, placing the child at risk for rejection by prosocial peers. During adolescence, this rejection and the continued lack of parental supervision increase the probability that the youth will associate with a negative peer group, thus increasing the risk for delinquent and antisocial behavior. Empirical examinations of this model have primarily focused on the indirect effect that parenting has on adolescent problem behavior through its effect on association with deviant peers (Aseltine, 1995; Brown, Mounts, Lamborn, & Steinberg, 1993; Dishion, Patterson, Stoolmiller, & Skinner, 1991; Elliott et al., 1985; Patterson & Dishion, 1985; Simons, Wu, Conger, & Lorenz, 1994). The authors of this model, however, explicitly state the expectation that both parenting and peer behavior will exert independent, direct effects on problem behavior during adolescence (Patterson & Dishion, 1985). Indeed, there is some evidence that when considered simultaneously, both parenting practices and involvement with deviant peers exert independent effects on adolescent delinquency (Ary, Duncan, Duncan, & Hops, 1999; Patterson & Stouthamer-Loeber, 1984).

Present Study

The purpose of this study was to investigate the relative influence of peer and parenting behavior on changes in adolescent gang involvement and gang delinquency. At this point, it is important to note that although the terms “gang involvement” and “gang delinquency” are often used interchangeably, there has been some speculation that the two are not synonymous (Curry & Spergel, 1992). Whereas gang involve-
ment includes participation in nondelinquent gang activities, gang delinquency encompasses participation in gang activities that include violence or law violations. Although gang involvement is likely a necessary step on the path toward gang delinquency, there exists a subset of youth who are involved in gangs but are not involved in delinquent activities (Curry & Spergel, 1992; Esbensen & Huizinga, 1993; Thornberry, Krohn, Lizotte, & Chard-Wierschem, 1993). Thus, it may be that the risk factors for gang involvement differ from those for gang delinquency. Therefore, rather than examine a single, global construct that attempts to capture all types of gang-related behaviors, this study separately examined gang involvement and gang delinquency, as defined above.

Given the strongly documented relation between peer and adolescent problem behavior, it was expected that peer gang involvement and peer gang delinquency would exert the largest influence on adolescent gang involvement and delinquency, respectively. However, consistent with Patterson’s (1982) model of adolescent problem behavior, it was anticipated that parenting practices would also exert a significant, direct impact on adolescent gang-related behavior. Moreover, reflecting research that has found that the effect of parenting may differ for youth from different ethnic backgrounds, it was predicted that the effect of parenting would be most evident in its interaction with ethnicity. This study expanded on existing research by examining factors that predict changes in gang involvement and gang delinquency utilizing multi-time point longitudinal data. Previous studies have typically been cross-sectional, making it difficult to establish causal relation between risk factors and gang membership. The longitudinal nature of this study allowed for better identification of factors that predict changes in behavior over time.

**METHOD**

**Participants**

Participants were recruited from 13 ninth-grade English classes at one senior high school in an urban, southeastern city. The 13 classes selected for recruitment comprised all regular ninth-grade English classes at the study school. All students who desired to participate, and who returned signed parent and child consent forms, were included in the sample. The study design prevented new entry of students into the sample and, therefore, participation was limited to those students who were enrolled in the class at the beginning of the academic year.

The initial sample was comprised of 300 students (55% male), ranging in age from 13 to 18 years (M = 14.59, SD = .77). This reflected over 85% of the students in the selected classes. Fifty-four percent of the students were Hispanic and 25% were Black, with the remainder (21%) being White or other ethnicity. We should note that there was a degree of heterogeneity within each of the three ethnic groups. For example, although the majority of the Hispanic students were of Cuban descent, others came from Central and South American backgrounds. Furthermore, some of the students in the Black ethnic group were Jamaican or Haitian. Although the heterogeneity was not ideal, further distinctions would have resulted in cells with too few participants. Over half (59.7%) of the students came from two-parent families; 78% of those included both biological parents. Approximately one third (31.7%) of the students lived with their mother only, in 11 cases (3.7%) the father was the sole primary caregiver, and in 8 cases (2.7%) it was someone else (e.g., grandparent, aunt).

**Procedure**

At the initial assessment, participants were administered a series of questionnaires in the classroom that took approximately 50 min to complete. Following this initial assessment, participants completed more focused, 10-min follow-up surveys approximately every 3 weeks for the remainder of the school year. Participants were compensated $10 for the initial survey and $1 for each follow-up survey. Seven follow-up surveys were conducted. The participation rates for the follow-up surveys ranged from 72.7% to 84.7%. Of the 300 students who completed the initial survey, over 80% completed five or more follow-up surveys.

Due to the sensitive nature of several of the survey questions, no identifying information (e.g., name, date of birth) was collected about the participants. Given the longitudinal nature of the study, however, it was necessary to link data from multiple time points. Therefore, at the initial data collection period, each participant created a private “password” that was used on all surveys. Each participant’s password was unique in that no other student in the same classroom was able to use the same password. The passwords were written on business-sized cards that were laminated and kept by each participant. At no time were passwords linked with the participants’ names. Therefore, all data were essentially anonymous in that it was impossible to connect any individual with any questionnaire.
Measures

Pretest Survey

At the initial assessment, participants were asked to complete a series of questionnaires comprised of measures of parenting (including behavioral and psychological control, conflict, and warmth) and measures of adolescent and peer problem behavior (i.e., gang involvement and delinquency).

Parenting. Two measures were used to assess different aspects of parenting behavior. Behavioral control was assessed with the Patterns of Decision Making Questionnaire (Steinberg, 1987b), a 28-item child-report questionnaire that examines decision-making processes in the home. Items consist of a series of daily life issues such as picking out clothes or deciding on a bedtime or curfew time. Items were rated on a 5-point Likert-type scale, ranging from 1 (“My parents tell me exactly what to do, without discussing it with me.”) to 5 (“I decide alone.”). This scale was reverse scored so that higher scores reflected higher levels of parental involvement in the child’s day-to-day decision making. The scale showed good internal consistency within our sample, α = .87.

The parenting measures also included a shortened version of the Child Report of Parental Behavior Inventory (Schaefer, 1965). This shortened version included 63 descriptions of parent behavior (e.g., “Makes me feel better after talking over my worries with them.”) that tap into types of control and warmth. Each item was rated on a 5-point Likert-type scale ranging from 1 (not like his or her parents) to 5 (very much like his or her parents). Youth not living with their parents were asked to rate their primary caretaker(s). Three subscales were used in this study: lax control (e.g., “Give me as much freedom as I want.”), psychological control (e.g., “Say if I really cared for them, I wouldn’t do things that cause them to worry.”), and parental warmth (e.g., “Believe in showing their love for me.”). Alphas for these subscales were .73, .72, and .92, respectively. An additional behavioral control subscale had low reliability, α = .60, and was consequently dropped in favor of the previously described Patterns of Decision Making Questionnaire (Steinberg, 1987b).

Adolescent gang behavior. Adolescent gang-related behavior was assessed using a shortened and modified version of the Gang Membership Inventory (Pillen & Hoewing-Roberson, 1992). This shortened version consisted of six descriptions of gang-related behavior. Participants rated their level of involvement in each type of behavior over the past month on a 6-point response scale ranging from 0 (never) to 5 (more than once a day). A factor analysis in which all factors with an eigenvalue greater than one were extracted bore out our a priori expectation that two factors would emerge—gang involvement and gang delinquency. The gang involvement factor consisted of three items: hanging out with a gang, wearing gang colors on purpose, and flashing gang hand signs on purpose. The remaining items—spray painting gang symbols, taking part in a fight representing a gang, and selling drugs for a gang—loaded on the gang delinquency factor. Factor-based subscales were created for both gang involvement and gang delinquency by calculating the mean of the respective items. Both measures had good internal consistency, α = .74 and α = .83, respectively.

Peer gang behavior. To assess gang-related behavior in a youth’s peer group, the previously described items from the Gang Membership Inventory (Pillen & Hoewing-Roberson, 1992) were modified to assess adolescents’ perspectives of the levels of these same activities within their peer group. Participants were asked to indicate how many of their friends had engaged in the specified activity over the past month on a 6-point response scale ranging from 0 (don’t know) to 5 (all of them). The results of principal components analysis of the peer version of this scale paralleled those presented above and analyses for this study used the peer gang involvement, α = .83, and peer gang delinquency subscales, α = .88.

Follow-Up Survey

Following the initial pretest survey at the start of the year, shortened follow-up surveys were administered approximately every 3 weeks. Each follow-up survey consisted of the previously described Gang Membership Inventory (Pillen & Hoewing-Roberson, 1992). Participants were asked to rate their level of involvement in each activity over the past 3 weeks.

Analyses

The primary analyses for this study were conducted using hierarchical linear modeling (HLM), a multilevel procedure that permits modeling change over time on an individual basis (Bryk & Raudenbush, 1992). Unlike traditional regression models that calculate the mean slope and intercept for an entire sample, HLM allows one to essentially model the slope and intercept for each individual participant. In other words, the initial level of the outcome at the start of the study (the intercept) and the degree of change in the outcome over time (the slope) can be modeled for each participant. In this study, we are interested in HLM analyses that modeled the slope—
specifically the effect parenting behavior had on changes in the slope for gang involvement and gang delinquency, and the degree to which ethnicity influenced this relation.

An additional advantage of HLM is that unlike traditional repeated measures regression or ANOVA, it is possible to perform HLM even when data are missing for some time points. Given that the majority of the students in this sample (58.5%) were missing data for at least one time point, this was a considerable benefit. It made the results more generalizable, whereas a sample comprised only of students with all seven follow-up data points would have been considerably biased.

RESULTS

Descriptive Statistics

Table 1 presents the means, standard deviations (SDs), and intercorrelation matrix for all measures. To give meaning to the scaling, a gang involvement score of .74 (the mean at the initial assessment period) corresponded to a student hanging out with a gang once a week during the 3 weeks prior to completing the survey, or hanging out with a gang once and deliberately wearing gang colors once during the three weeks prior to completing the survey.

Summary of Analytic Approach

The goal of the study was to examine the effect of parenting on changes in gang involvement and gang delinquency. To accomplish this, the following series of analyses was conducted. The first series tested whether there was overall change and/or significant individual variability in gang involvement and gang delinquency over time, regardless of parenting behavior, peer behavior, or ethnic and cultural heritage. This was done through two HLM analyses: the first examined the mean intercept and slope over time for gang involvement, and the second examined the mean intercept and slope over time for gang delinquency. Second, given the well documented relation between peer and adolescent behavior, a pair of separate HLM analyses were conducted examining the effect of (1) peer gang involvement on changes in gang involvement over time (i.e., the slope term), and (2) peer gang delinquency on changes in gang delinquency over time. Finally, four pairs of analyses were conducted examining the role of each of the four parenting variables on changes in gang involvement and gang delinquency. For example, the first pair of these final analyses examined (1) the effect of behavioral control on changes in gang involvement after controlling for peer gang involvement and ethnic and cultural heritage, and (2) the effect of behavioral control on changes in gang delinquency after controlling for peer gang delinquency and ethnic and cultural heritage. As noted above, given the inconsistent effects observed in previous studies, it was anticipated that parenting and ethnic and cultural heritage would interact when predicting change over time (i.e., the slope term). Consequently, the tests of the Parenting × Ethnic and Cultural Heritage interactions on the slope terms represented the primary interest of this study. These same analyses were then conducted for each of the three remaining parenting measures: lax control, psychological control, and warmth. (It should be noted that the preliminary analyses conducted for this article also examined gender differences in rates of gang-related behavior and the influence of ethnicity, parenting, and peer behavior. These analyses, however, found no such gender differences. To avoid the problem of excessive terms in the model, gender was not included in these analyses.)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Sample M (SD)</th>
<th>Hispanic M (SD)</th>
<th>Black M (SD)</th>
<th>White/Other M (SD)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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<tbody>
<tr>
<td>Gang involvement</td>
<td>.48 (.94)</td>
<td>.45 (.98)</td>
<td>.63 (1.03)</td>
<td>.37 (.79)</td>
<td>.740**</td>
<td>.401**</td>
<td>.361**</td>
<td>-.114**</td>
<td>.025</td>
<td>.081**</td>
<td>-.172**</td>
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<tr>
<td>Gang delinquency</td>
<td>.27 (.77)</td>
<td>.23 (.73)</td>
<td>.39 (.89)</td>
<td>.20 (.67)</td>
<td>.252**</td>
<td>.270**</td>
<td>-.113**</td>
<td>.023</td>
<td>.066**</td>
<td>-.143**</td>
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<tr>
<td>Peer gang involvement</td>
<td>1.90 (1.28)</td>
<td>2.03 (1.33)</td>
<td>1.79 (1.26)</td>
<td>1.59 (1.09)</td>
<td>.796**</td>
<td>-.108**</td>
<td>.023</td>
<td>.138**</td>
<td>-.143**</td>
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<td>Peer gang delinquency</td>
<td>1.58 (1.24)</td>
<td>1.63 (1.26)</td>
<td>1.67 (1.31)</td>
<td>1.29 (.91)</td>
<td>.090**</td>
<td>.054*</td>
<td>.180**</td>
<td>-.136**</td>
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<tr>
<td>Behavioral control</td>
<td>2.55 (.62)</td>
<td>2.44 (.56)</td>
<td>2.75 (.63)</td>
<td>2.68 (.78)</td>
<td>-.488**</td>
<td>.079**</td>
<td>.107**</td>
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<tr>
<td>Lax control</td>
<td>2.54 (.80)</td>
<td>2.58 (.80)</td>
<td>2.41 (.78)</td>
<td>2.50 (.80)</td>
<td>-.030</td>
<td>.008</td>
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<td>Psychological control</td>
<td>2.98 (.95)</td>
<td>2.90 (.93)</td>
<td>3.13 (.94)</td>
<td>2.92 (1.09)</td>
<td>-.235**</td>
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<tr>
<td>Parental warmth</td>
<td>3.64 (.90)</td>
<td>3.74 (.88)</td>
<td>3.50 (.92)</td>
<td>3.52 (.97)</td>
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*p < .05; **p < .01.
Mean Intercept and Slope

As noted above, the first step in the analyses involved estimating the average levels of gang involvement and delinquency at the beginning of the study (i.e., grand mean intercept) and the degree and rate of change in those behaviors over the course of the school year (i.e., grand mean slope). Given the skewed nature of the data, gang involvement and gang delinquency were transformed using a square-root transformation.

Figure 1 presents the mean growth curves for gang involvement and gang delinquency. The results of HLM analyses that examined gang involvement indicated that both the intercept, $\gamma = .526, z = 13.84, p < .001$, and the slope, $\gamma = -.035, z = -5.83, p < .001$, were significantly different from zero and were, therefore, retained in the analyses. Furthermore, there was significant variance across individuals in initial level of gang involvement, $\tau = .300, z = 9.09, p < .001$, as well as rates of change in gang involvement, $\tau = .005, z = 5.00, p < .001$. The negative slope indicated that the average level of gang involvement decreased over time.

The results of HLM analyses that examined the mean growth curve for gang delinquency indicated that although the intercept was significantly different from zero, $\gamma = .198, z = 7.07, p < .001$, the slope was not, $\gamma = -.001, z = -20, p = .841$. That is, the average level of gang delinquency in the entire sample remained constant over time. As reflected by the variances, however, there was significant variation in rates of change in gang delinquency between individual students, $\tau = .002, z = 2.00, p = .045$. Students also showed significant variation in their initial levels, $\tau = .121, z = 7.12, p < .001$.

Effect of Peer Behavior

A pair of analyses that examined the impact of peers on these outcomes was conducted next.

Peer Behavior and Gang Involvement

The results of HLM analyses indicated that peer gang involvement was significantly related to both initial level of gang involvement, $\gamma = .253, z = 9.58, p < .001$, and to change in gang involvement over time, $\gamma = -0.12, z = 2.20, p = .028$. The direction of these effects differed from each other, however, that is, adolescents who reported having greater numbers of gang-involved peers at the initial assessment showed higher levels of gang involvement themselves at the beginning of the study but greater decreases in gang involvement over time. As reflected in the gamma coefficients, however, the more negative slope did not offset the much higher initial levels of gang involvement. Consequently, youth who reported having more gang-involved peers did, in fact, have higher overall levels of gang involvement throughout the course of the study.

Peer Behavior and Gang Delinquency

A similar pattern was found in the effect of peer gang delinquency on youth gang delinquency. Although peer gang delinquency was found to be a significant predictor of initial gang delinquency, $\gamma = .156, z = 7.80, p < .001$, and change in gang delinquency over time, $\gamma = -0.09, z = -2.25, p = .024$, the direction of each effect differed from the other. Higher levels of peer gang delinquency were related to higher levels of adolescents’ own gang delinquency at the beginning of the study, but were related to decreases in adolescents’ reports of their own gang delinquency over time.

Effect of Ethnicity and Parenting Behavior

Finally, the goal of this study was to investigate the effect of ethnicity on the relation between parenting and gang involvement and gang delinquency after controlling for peer behavior. To do this, a series of HLM models that included the effect of peers, ethnicity, parenting, and the Ethnicity \times Parenting interaction was conducted. As noted previously, the primary interest in each of these analyses was the effect of the Ethnicity \times Parenting interaction on the slope.

The first step in each set of models was to test the effect of ethnicity on gang involvement and gang delinquency after controlling for peer behavior. As mentioned earlier, Hispanic students were the single largest
ethnic group in the study (54%). Ethnicity, therefore, was dummy coded so that Hispanic youth served as the referent group. A series of analyses that tested the effect of ethnicity on gang involvement found that after controlling for peer gang involvement, ethnicity was significantly related to initial gang involvement, \( \chi^2(2, N = 252) = 14.214, p < .001 \), but unrelated to change over time, \( \chi^2(2, N = 252) = 2.995, p = .224 \). A similar relation existed between ethnicity and gang delinquency: After controlling for the effect of peer gang delinquency, there was a marginally significant relation between ethnicity and initial gang delinquency, \( \chi^2(2, N = 255) = 5.356, p = .069 \); however, ethnicity was not related to change over time, \( \chi^2(2, N = 255) = 3.428, p = .180 \). In both cases, this reflected higher mean initial levels for Black youth, relative to Hispanic and White/Other youth.

Behavioral Control and Gang Involvement

The next series of analyses, which examined the impact of behavioral control, found that behavioral control was significantly related to initial gang involvement after controlling for peer gang involvement and ethnicity, \( \chi^2(1, N = 252) = 4.414, p = .036 \). Specifically, higher levels of behavioral control were associated with lower levels of initial gang involvement. Behavioral control was not related to the slope of gang involvement over time, \( \chi^2(1, N = 252) = .124, p = .725 \); however, as predicted, an Ethnicity \times\ Behavioral Control interaction on the slope was observed, \( \chi^2(2, N = 252) = 5.828, p = .054 \) (see Figure 2). After controlling for peer gang involvement, behavioral control had no effect on the slope for Hispanics, \( \gamma = .007, z = .47, p = .638 \). Also, although slightly more positive, the effect of behavioral control on the slope for White/Other students was not significantly different from Hispanics, \( \gamma = .020, z = .87, p = .384 \). In contrast, the effect of behavioral control on the slope for Blacks was marginally significantly different from Hispanics in a negative direction, \( \gamma = -.047, z = -1.81, p = .070 \), and consequently even more extreme relative to White/Other youth. It should be noted that the coefficients presented above are those that resulted in each stage of the analyses. The coefficients in the final model, in which all variables and the Ethnicity \times\ Behavioral Control interaction were included, are presented, in Table 2.

As reflected in Figure 2, after controlling for peer behavior, higher levels of behavioral control (i.e., +1.5 SDs) were related to decreases in gang involvement over time among Black youth, whereas low levels of behavioral control (i.e., −1.5 SDs) were related to increases in gang involvement for these youth. In contrast, behavioral control had minimal effect on changes in gang involvement among Hispanic youth. The effect among White/Other youth was more complicated, in that higher levels of behavioral control were related to lesser decreases in gang involvement over time.

Behavioral Control and Gang Delinquency

After controlling for the effect of peer gang delinquency and ethnicity, HLM analyses detected a marginally significant relation between behavioral control and initial level of gang delinquency, \( \chi^2(1, N = 255) = 2.931, p = .087 \), and a nonsignificant effect for behavioral control on the slope for change in gang delinquency over time, \( \chi^2(1, N = 255) = .036, p = .849 \). However, as predicted, the Ethnicity \times\ Behavioral Control interaction on changes over time was significant, \( \chi^2(2, N = 255) = 7.499, p = .024 \) (see Figure 3). Behavioral control had a marginal effect on the slope among Hispanic students, \( \gamma = -.021, z = -1.75, p = .080 \), and the effect did not differ for Blacks relative to Hispanics, \( \gamma = .008, z = .38, p = .704 \). Among White/Other students, however, behavioral control had a significantly more positive effect on the slope relative to Hispanics, \( \gamma = .048, z = 2.67, p = .008 \). Table 3 presents the coefficients in the final model, in which all variables and the Ethnicity \times\ Behavioral Control interaction are included.

As reflected in Figure 3, after controlling for peer behavior, low levels of behavioral control were related to increases in gang delinquency over time among Hispanic youth, whereas high levels were related to decreases in gang delinquency over time. A similar pattern was observed among Blacks, with
lower levels of behavioral control related to larger increases in gang delinquency over time. The opposite effect was observed among White/Other youth, with lower levels of behavioral control being related to decreases in gang delinquency, and higher levels of behavioral control being related to modest increases in gang delinquency over time. To a degree, however, this effect was offset by the lower initial levels of gang delinquency observed among White/Other youth reporting high levels of behavioral control.

Lax Control and Gang Involvement

The results of HLM analyses that modeled the effect of lax control after controlling for peer behavior and ethnicity found that lax control did not have a significant effect on either the initial levels of gang involvement, \( \chi^2(1, N = 252) = .111, p = .739 \), or the change in gang involvement over time, \( \chi^2(1, N = 252) = .226, p = .634 \). The predicted Ethnicity \( \times \) Lax Control interaction for the slope was significant, however, \( \chi^2(2, N = 252) = 6.909, p = .023 \) (see Figure 4). After controlling for peer gang involvement, lax control had no effect on the slope among Hispanic students, \( \gamma = -.014, z = -1.27, p = .204 \). Furthermore, the effect of lax control on the slope for White/Other students was not significantly different from that of Hispanic youth, \( \gamma = .025, z = 1.32, p = .187 \). In contrast, lax control did have a significant effect on the slope for Black students, relative to Hispanic youth, \( \gamma = .053, z = 2.52, p = .012 \). The coefficients in the final model are presented in Table 2. As reflected in Figure 4, although lax control had no differential effect on levels of gang involvement for Hispanic or White/Other youth, higher levels of lax control were related to increases in gang involve-

![Figure 3](image-url)
Lax Control and Gang Delinquency

A similar pattern of relations was found between lax control and gang delinquency. Whereas lax control was unrelated to either initial levels of gang delinquency, \( \chi^2(1, N = 255) = .166, p = .684 \), or change in gang delinquency over time, \( \chi^2(1, N = 255) = .057, p = .811 \), there was a significant Lax Control \( \times \) Ethnicity Interaction, \( \chi^2(2, N = 255) = 6.545, p = .038 \) (see Figure 5). The effect of lax control on the slope for Hispanic students was not significant, \( \gamma = -.011, z = -1.22, p = .235 \), and again this effect did not differ for White/Other adolescents relative to Hispanic adolescents, \( \gamma = .003, z = .20, p = .841 \). Among Blacks, however, lax control had a significant effect on the slope relative to Hispanics, \( \gamma = .041, z = 2.56, p = .010 \). Table 3 presents the final model with coefficients for all variables and the Ethnicity \( \times \) Lax Control interaction. As shown in Figure 5, after controlling for peer behavior, lax control had no differential effect on levels of gang delinquency for Hispanic or White/Other youth, whereas higher levels of lax control were related to increases in gang delinquency among Black youth.

Psychological Control and Gang Involvement

The results of HLM analyses indicated that psychological control was not related to initial levels of gang involvement, \( \chi^2(1, N = 252) = 1.412, p = .235 \), nor was it related to the slope of gang involvement over time, \( \chi^2(1, N = 252) = .002, p = .964 \). The effect of the Ethnicity \( \times \) Psychological Control interaction on the slope was

![Figure 4 Ethnic differences in the effect of lax control on gang involvement.](image)

### Table 3 Results of Hierarchical Linear Modeling Analyses Modeling Gang Delinquency

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Behavioral Control</th>
<th>Lax Control</th>
<th>Psychological Control</th>
<th>Parental Warmth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept (initial status)</td>
<td>( \gamma )</td>
<td>SE</td>
<td>( \gamma )</td>
<td>SE</td>
</tr>
<tr>
<td>Base (i.e., intercept for predicting intercept term)</td>
<td>-0.025</td>
<td>0.166</td>
<td>-0.124</td>
<td>0.120</td>
</tr>
<tr>
<td>Peer behavior</td>
<td>0.156**</td>
<td>0.020</td>
<td>0.156**</td>
<td>0.020</td>
</tr>
<tr>
<td>Black ethnicity</td>
<td>-0.143</td>
<td>0.298</td>
<td>0.166</td>
<td>0.206</td>
</tr>
<tr>
<td>White/Other ethnicity</td>
<td>0.300</td>
<td>0.254</td>
<td>0.079</td>
<td>0.202</td>
</tr>
<tr>
<td>Parenting</td>
<td>-0.019</td>
<td>0.064</td>
<td>0.021</td>
<td>0.044</td>
</tr>
<tr>
<td>Black ethnicity ( \times ) Parenting</td>
<td>-0.018</td>
<td>0.107</td>
<td>-0.013</td>
<td>0.082</td>
</tr>
<tr>
<td>White/Other ethnicity ( \times ) Parenting</td>
<td>-0.091</td>
<td>0.095</td>
<td>-0.011</td>
<td>0.077</td>
</tr>
<tr>
<td>Slope (change)</td>
<td>( \gamma )</td>
<td>SE</td>
<td>( \gamma )</td>
<td>SE</td>
</tr>
<tr>
<td>Base (i.e., intercept for predicting slope term)</td>
<td>0.066*</td>
<td>0.032</td>
<td>0.040</td>
<td>0.024</td>
</tr>
<tr>
<td>Peer behavior</td>
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<td>0.004</td>
<td>-0.010</td>
<td>0.004</td>
</tr>
<tr>
<td>Black ethnicity</td>
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<td>0.052</td>
<td>-0.081</td>
<td>0.040</td>
</tr>
<tr>
<td>White/Other ethnicity</td>
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<td>0.048</td>
<td>-0.019</td>
<td>0.039</td>
</tr>
<tr>
<td>Parenting</td>
<td>-0.021*</td>
<td>0.012</td>
<td>-0.011</td>
<td>0.009</td>
</tr>
<tr>
<td>Black Ethnicity ( \times ) Parenting</td>
<td>0.008</td>
<td>0.021</td>
<td>0.041</td>
<td>0.016</td>
</tr>
<tr>
<td>White/Other ethnicity ( \times ) Parenting</td>
<td>0.048**</td>
<td>0.018</td>
<td>0.003</td>
<td>0.015</td>
</tr>
</tbody>
</table>

*Note*: Table reports values for \( \gamma \) in the final model with all variables entered.

* \( p < .05; ** \( p < .01; + \ p < .10.\)
significant, however, $\chi^2(2, N = 252) = 8.373, p = .015$. After controlling for the effect of peer gang involvement and ethnicity, psychological control had a marginally significant negative effect on the slope among Hispanic students, $\gamma = -.015, z = -1.67, p = .095$. The effect of psychological control on the slope for White/Other students was not significantly different from Hispanics, $\gamma = .016, z = 1.07, p = .284$. In contrast, the effect of psychological control on the slope for Blacks was significantly different from Hispanics, $\gamma = .048, z = 2.82, p = .005$. Table 2 presents the coefficients for the final model.

As reflected in Figure 6, after controlling for peer behavior, psychological control essentially had no effect on the slope of gang involvement for White/Other youth. The effect on the slope for Hispanic and Black students was significant, albeit in opposite directions. Higher levels of psychological control were related to greater decreases in gang involvement over time among Hispanics, but were related to increases among Black students.

Psychological Control and Gang Involvement

The results of HLM analyses also indicated a significant relation between parental warmth and initial gang delinquency after controlling for peer gang delinquency and ethnicity, $\gamma = -.081, z = -2.89, p = .004$, with higher levels of warmth being associated with lower initial levels of gang delinquency. Parental warmth also had a significant effect on rate of change in gang delinquency over time, $\gamma = .010, z = 2.00, p = .046$, with higher levels being related to increases in gang delinquency over time. The modest increase over time did not offset the lower initial levels, however. The effect of the Ethnicity × Parental Warmth interaction.
With respect to the influence of deviant peers, these findings suggested that gang behavior when considered simultaneously is significantly and directly influenced by adolescent gang-related behavior using longitudinal data. Overall, these results support Curry and Spergel's (1992) suggestion that gang involvement and gang delinquency are different phenomena. Although the two are correlated, there are several reasons to conceptualize them as separate factors. For example, as explained in more detail below, these findings point to differences in risk factors for gang involvement and delinquency. Furthermore, the negative slope of gang involvement indicates that, for most youth in this study, participation in minor gang activities (e.g., flashing gang hand signs) decreased over the course of the first year in high school. These findings, although seemingly counterintuitive, are consistent with other research that suggests youth gang membership is a transient rather than stable phenomenon, with most gang members remaining in gangs for less than 1 year (Esbensen & Huizinga, 1993; Thornberry, 1998; Thornberry et al., 1993). One possible explanation for this decline is that for some students, participation in these nominal gang activities may provide security and a sense of belonging during the transition from middle school to high school. As the school year progresses and students become increasingly involved in legitimate academic and extracurricular activities, however, the need for conspicuous displays of gang affiliation may diminish. On the other hand, participation in delinquent gang activities (e.g., fighting, selling drugs) remained relatively stable over time, suggesting that those youth who are involved in these activities may be at substantially higher risk of having long-term behavior problems. The differential trajectories of gang involvement and gang delinquency highlight the need to conceptualize them as separate constructs, a finding that would have been lost if they had been combined into a single construct due to their moderate correlation.

Overall, these findings are consistent with the social interactional perspective of youth problem behavior (e.g., Patterson, 1982) in that exposure to deviant peers and poor family management practices were each found to significantly and directly influence adolescent gang behavior when considered simultaneously. With respect to the influence of deviant peers, these data provide support for other research that has highlighted the importance of peers as a predictor of adolescent problem behavior (e.g., Elliott et al., 1985; Mason et al., 1994; Reyes & Jason, 1993; Sampson & Laub, 1993). As expected, higher levels of peer gang involvement and peer gang delinquency were related to higher initial levels of gang involvement and gang delinquency, respectively. Peer behavior was inversely related to rate of change over time, however. That is, adolescents who reported greater numbers of gang-involved peers at the beginning of the school year showed greater decreases in their own gang involvement over the course of the school year. A similar relation existed with respect to gang delinquency. Although this, too, may initially seem counterintuitive, it reflects the substantial impact of peer problem behavior on initial levels of gang behavior. In effect, the decline over time did not compensate for the much higher initial levels.

Although the effect of peers was relatively straightforward, the effect of parenting was more complex. Without considering its interaction with ethnicity, the influence of parenting appeared to be modest and largely limited to initial levels of gang behavior after controlling for peer behavior. Specifically, higher levels of behavioral control and warmth were related to lower initial levels of gang involvement and gang delinquency. When examined strictly as a main effect, changes in behavior was only predicted by psychological control, which was related to increases in gang delinquency. The minimal effect of parenting, when considered in this way, was similar to other research that indicated that gang membership was unrelated to parental management practices or the quality of parent–adolescent relationships (Jankowski, 1991; Lahey et al., 1999; Lyon et al., 1992). Analyses examining ethnic differences in the effect of parenting, however, indicated that for youth from specific ethnic backgrounds, the role of parenting on changes in these behaviors is much more robust.

For Black youth, parenting appeared to play a particularly salient and clear role. Specifically, higher levels of behavioral control and lower levels of lax and psychological control were related to decreases in gang involvement for Blacks, with higher levels of behavioral control and lower levels of lax control also related to decreases in gang delinquency. In contrast, lax control had no effect among Hispanic youth and neither lax nor psychological control had an effect among White/Other youth. Moreover, counter to what was observed among Black youth, higher levels of behavioral control were related to increases in both gang involvement and gang delinquency among White/Other youth, whereas higher levels of psycho-
logical control were related to decreases in gang involvement among Hispanic youth.

Although the consideration of ethnic differences in the influence of parenting on youth problem behavior is an extension of the social interactional model, this study complements other research that has examined such differences. The greater effect of parenting on gang-related behavior for Black youth is consistent with Curry and Spergel's (1992) findings that family relationships may be more important predictors of gang involvement among Blacks than Hispanics. Along similar lines, these results confirm Cernkovich and Giordano's (1987) findings that parental control and supervision have greater effects on problem behavior among Blacks than among Whites. Finally, these results provide some support, although limited, for Smith and Krohn's (1995) analysis of ethnic differences in the effect of behavioral control on delinquency. Consistent with their findings, these results indicated that behavioral control predicted better outcomes for Blacks. The support for their findings regarding the role of behavioral control among Hispanics and Whites, however, was less consistent. Although this study also found that behavioral control had no effect on change in gang involvement among Hispanics, there was a marginally negative relation between behavioral control and gang delinquency. Furthermore, contrary to Smith and Krohn (1995), behavioral control was related, to some extent, to worse outcomes over time for White/Other youth. In fact, with the exception of Lamborn and colleagues' (1996) findings that unilateral parental decision making was related to lower psychosocial development among White youth, research has generally found higher levels of parental behavioral control to be related to lower levels of delinquency among White adolescents (e.g., Elliott et al., 1985; Keenan et al., 1995; Patterson & Stouthamer-Loeber, 1984; Sampson & Laub, 1993; Steinberg, 1987a). Clearly, replication of these findings is necessary.

These findings are particularly important in that they point to the significant effect that parents can have on adolescent behavior, even after controlling for peer problem behavior. Other research has emphasized the role of peers in adolescent problem behavior (e.g., Elliott et al., 1985; Patterson & Dishion, 1985). For example, the National Research Council (1993) concluded that the effect of deviant peers during adolescence for Black youth is overwhelming and may not be offset by parenting. According to this study, however, parents are not powerless in impacting adolescent behavior even with the existence of a negative peer group. This is particularly the case with Black students, for whom better family management practices (i.e., greater supervision and monitoring and less manipulative and guilt-based control) are associated with better behavioral outcomes over time. It is important to note that without examination of ethnic differences, many of the significant findings regarding the impact of parenting would have been lost and the role of parenting would have been underestimated. This underscores the need for future studies on the relation between parenting and adolescent problem behavior to examine the interaction between ethnicity and parenting.

Similarly, these findings also highlight the importance of analyses that model both the initial levels (intercept) and the change in behavior over time (slope). As these results have shown, youth who show the same absolute levels of gang involvement at any given time may actually be headed in very different directions. Furthermore, risk factors may have different, even opposite, effects on initial status and change. For example, higher levels of parental warmth were associated with lower initial levels of gang delinquency, but were related to increases in gang delinquency over time. To a degree, this may reflect floor effects: youth with these low levels essentially have nowhere to go but up.

Although this study provides valuable insight into the role of parenting, the predominantly ethnic minority sample and the heterogeneity within each ethnic group place some limitations on the strength of the conclusions that can be drawn from these findings. The sample is representative of the Miami population, however, and given that the majority of gang members nationwide are Hispanic or Black, these results provide important information about the risk factors for gang involvement among the population that is most at risk. In addition, the exclusion of new students from entering the study, as well as the loss of students who may have transferred to other schools or dropped out of school altogether, may have potentially introduced a bias into the findings in that students from residentially mobile families may be at increased risk for problem behavior in general. Furthermore, given that parenting behavior was assessed at a single point in time, it is impossible to examine potential reciprocal effects between parenting and gang-related behavior. For example, although high psychological control may lead to higher levels of initial gang involvement, parental use of psychological control may also have been in response to earlier problem behavior. Finally, the nature of the relation between gang involvement and gang delinquency remains unclear. It is impossible to tell from the findings presented here whether minor gang involve-
Culturally Sensitive Prevention and Intervention Programs

As stated previously, these findings highlight the need for different treatment strategies for youth from different ethnic backgrounds. Although gang-related behavior for youth from all ethnic backgrounds appears to be influenced, at least to some extent, by both peer and parenting behavior, these data indicate that Black youth would especially benefit from family-oriented treatment approaches. Specifically, programs are needed that emphasize increasing parental control and supervision over adolescent’s daily activities, while decreasing parental use of manipulative and guilt-based control.

Differentiation between Gang Involvement and Gang Delinquency

These findings point to differences in the risk factors and behavioral trajectories of gang involvement and gang delinquency. Similarly, the data provide support for the evidence of a subset of gang-involved youth who do not participate in delinquent gang activities. Research that examines the differences between these two groups would contribute significantly to our understanding and prevention of the youth gang problem. It may well be that the intervention techniques used for these groups may differ, with youth who participate in gang delinquency requiring more intensive services.

Scale Development

Many studies employ a single, dichotomous variable as a measure of youth gang involvement (e.g., are you a member of a gang). A distinct advantage of such an approach is that it allows self-definition of gang membership, thus avoiding the complexities inherent in defining gangs (e.g., regional or ethnic differences in gang characteristics). Nevertheless, a more behavior-oriented, continuous measurement approach (such as the one used in this study) has considerable benefits. First, assessing specific behaviors allows for identification of youth who may be involved in gang activities but who do not acknowledge being members of a gang. Second, given the limited funding for long-term studies that follow individuals from childhood through adolescence (thus maximizing the potential for capturing initial gang entry), this approach allows for the examination of frequency rates of participation in gang behavior and the factors that predict differential levels of gang behavior.

Multisystemic Nature of Gang Behavior

The findings of this study extend the results of other studies by demonstrating that risk factors for adolescent gang involvement and gang delinquency may exist simultaneously within multiple social contexts. Although peers are often thought of as the single most dominant influence on adolescent problem behavior, this study suggests that other systems, such as the parent–child relationship, also play a role. More research is needed to explore such a multisystemic perspective and to incorporate influences such as neighborhood and school effects. Furthermore, there is a need for prevention and intervention strategies that target the many systems in which adolescents live (e.g., peer networks, families). Currently, many gang-prevention programs tend to be oriented toward the individual. Many of these programs, however, have demonstrated little or no impact on rates of gang membership, with some even resulting in increases in gang delinquency (Howell, 1998). Ecological treatment programs, such as multisystemic therapy and structural ecosystemic therapy (Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 1998; Szapocznik et al., 1997), which have been shown to be effective with juvenile offenders and adolescent substance abusers, may also be appropriate for gang-involved youth.

ment is a necessary precursor to participation in delinquent gang activities.

Nevertheless, in spite of these limitations, this study has numerous strengths. It provides high-frequency, longitudinal data on a large, ethnically diverse sample of students. The high participation rate of students in the target school, as well as the high rates of participation in the follow-up surveys, enhances the generalizability of these findings. The use of passwords to identify follow-up surveys provides an important methodological contribution to the literature in that it presents a means of collecting sensitive data with near anonymity in longitudinal research. The youth that participated in this study indicated that they were comfortable with this procedure and felt assured that their responses would remain confidential. Another considerable advantage of this study is the use of HLM to analyze the data. As mentioned previously, without these analyses the differential trajectories of gang involvement and gang delinquency would have been lost and many of the significant effects of parenting would not have been detected.

From an applied perspective, this study has several potentially important implications for program and policy development.
ACKNOWLEDGMENTS

Material presented in this article served as the basis for a doctoral dissertation by C. J. Walker-Barnes. The authors thank the parents and teachers of the students who participated in this study, as well as the University of Miami undergraduate students who assisted in data collection. This research was supported by a grant (NIMH: R29 MH55667) awarded to C. A. Mason.

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