School Behaviors and Attitudes as Mediators of Gang Influence on School Violence in High Schools

Joey Nuñez Estrada Jr., Ph.D.
San Diego State University
College of Education
Department of Counseling and School Psychology
5500 Campanile Drive
San Diego, California 92182-1179
jestrada@mail.sdsu.edu

Tamika D. Gilreath, Ph.D.
University of Southern California

Ron Avi Astor, Ph.D.
University of Southern California

Rami Benbenishty, Ph.D.
Bar Ilan University
Abstract

There is insufficient empirical evidence exploring associations between gang membership and school violence behaviors. Using a sample of 272,863 high school students, this study employs a structural equation model to examine how school risk and protective behaviors and attitudes mediate effects of gang members’ involvement with school violence behaviors. The most important finding is that gang membership is not directly associated with school violence perpetration or victimization. Results indicate school risk behaviors and attitudes indirectly mediate associations between gang membership and school violence perpetration and victimization. This suggests that when gang members partake in school risk behaviors they are more likely to be involved as school violence perpetrators. Findings reveal gang membership has a strong positive association with school-based risk behaviors and attitudes and a moderate negative association with school protective behaviors and attitudes. Implications for further research, theory, and practice for both gang and school violence researchers are discussed.

KEYWORDS: Gang Membership; School Violence; School Risk Behaviors; School Protective Behaviors; High Schools
Empirical evidence shows that school violence and gangs are two serious social issues that impact the lives of many high school students (Astor, Benbenishty, Zeira, & Vinokur, 2002; Astor, Guerra, & Van Acker, 2010; Benbenishty & Astor, 2005; Benbenishty, Astor, Zeira, 1998; Cornell & Mayer, 2010; Curry & Decker, 1998; Kachur et al., 1996; Klein & Maxson, 2006; Swearer, Espelage, Vaillancourt, & Hymel, 2010). However, in the United States, studies that investigate the connection between school violence behaviors experienced and perpetrated by gang members on school grounds are scarce (For recent exceptions see Estrada, Gilreath, Astor, & Benbenishty, 2013; Estrada, Astor, Benbenishty, Gilreath, & De Pedro, 2011a, 2011b; Horst & Lomax, 2011; Toldson & Sutton, 2011). Although “on the ground” educators and law enforcement officers are keenly aware of the connections between gangs and school violence, school violence research has traditionally focused on school variables and often overlooks the role gang members in schools may play in overall school violence behaviors. Gang research frequently concentrates mainly on community factors versus utilizing the school context as a potential center for gang-related violence. Empirical evidence that carefully measures the relations between school violence and gang membership is relatively limited.

To date, there are only a handful of studies that assess youth behavioral reports of gang members within the school context (Curry, 2000; Esbensen & Deschenes, 1998; Gottfredson & Gottfredson, 2001; Naber et al., 2006). In our most recent work we examine a theoretical model of how school risk and protective behaviors and attitudes mediate the effects of gang membership on school violence behaviors for California middle school students ([name deleted to maintain the integrity of the review process]). However, since middle and high schools are organizationally and conceptually different places during unique periods of adolescent development, we wanted to test a similar theoretical model to determine if there are similarities
or differences in the findings. Theoretically, little is known about how school risk and protective behaviors potentially mediate gang presence on school grounds and overall school violence perpetration and victimization patterns in high school settings. This study is one of the first inquiries using statewide data to examine if school risk and protective behaviors mediate the effects of gang membership on school violence behaviors within the high school setting.

The Role of the School Context on School Violence and Gang Membership

Gang theory and empirical literatures have focused primarily on the individual, family, community, and peer domains, and practically ignore the exploration of variables in the high school context that may be associated with the presence of gang members (Klein & Maxson, 2006). With a few exceptions (see Astor, Benbenishty, & Estrada, 2009; [name deleted to maintain the integrity of the review process]; Chen & Astor, 2011a, 2011b; Gottfredson & Gottfredson, 2001), the school violence empirical literature has also neglected the influence of gangs as a major contributor to victimization or perpetration on school grounds and has mainly concentrated on school, peer or individual child variables that do not include gang membership. Complex social issues like gangs and school violence require researchers to take a school-focused socio-ecological approach that explores how variables within the school mediate or moderate social influences from outside the school, such as gang affiliation ([name deleted to maintain the integrity of the review process]).

Because laws in the United States require youth to attend school daily, it is logical to assume that gangs could become a normal part of a school culture if the school is nested in a gang area or in the catchment area of regions that have many teen gang members. In fact, within the gang literature, gang members sometimes report that recruitment strategies for increasing gang membership, rather than their personal academic achievement, as the primary reason for
attending and staying in school (Boyle, 1992). Clearly, there is empirical evidence that secondary students are aware when gangs are present in their schools. A study that surveyed 12-18 year old students indicated that 23% stated there were gangs at their schools (Robers, Zhang, & Truman, 2010). More recently, the 2010 National Survey of American Attitudes on Substance Abuse XV: Teens and Parents reported that 45% of high school students stated there are gangs, or students who consider themselves to be part of a gang, in their schools (NCASA, 2010). Also, research that surveyed school administrators and teachers found that gangs ranked second only to drugs as the most significant school safety issue (Stephens, 1989; Sullivan & Keeney, 2008).

A few studies conducted over a decade ago provide evidence suggesting that gangs may be the main reason for increases in school violence within specific schools, and that in those schools victimization nearly doubles if gangs are in the surrounding community and school (Burnett & Walz, 1994; Howell, 1998). This makes great intuitive sense. However, even with recent intense interest on issues of school bullying and school violence, little empirical work has been done to further explore the nexus between gangs and school violence or bullying on school grounds.

**Gang Membership and School Violence**

Given that violence is reputed to be a key ingredient of gang culture, much attention has been devoted to the relation between gang membership and violence perpetration (Decker & Van Winkle, 1996). Research has determined that in comparison to those who are not in a gang, those who are gang members are more likely to commit violent acts (Battin et al., 1998; Curry, Decker, & Egley, 2002; Esbensen & Huizinga, 1993; Esbensen & Winfree, 1998). Furthermore, the association between gang membership and victimization has been widely researched (Gatti, Tremblay, Vitaro, & McDuff, 2005; Miller, 2001; Taylor, Peterson, Esbensen, & Freng, 2007;
Thornberry, Huizinga, & Loeber, 2004). Taylor and colleagues (2007) report that gang members were far more likely to be victimized and suffered a greater number of victimizations than non-gang members in both general and serious types of violence. Unfortunately, the contexts where gang members perpetrate and experience violence are rarely specified. Therefore, this current study will assess whether violence associated with gang members is a major contributor to high school violence.

**Gang Membership and School-Related Risk Behaviors and Attitudes**

The pathway to adolescent delinquent behavior, such as becoming a gang member or school violence perpetrator, is dependent upon a balancing act between risk factors that increase susceptibility and protective factors that enhance an individual’s resistance and coping abilities (Stoiber & Good, 1998). For instance, empirical evidence shows that truancy is related to risky behaviors that include gang membership, drug use, and delinquency (Garry, 1996; Martin, Schulze, & Valdez 1988; Rohrman 1993; Maxson, Whitlock, & Klein, 1998). Furthermore, early drug use has consistently been found as a predictor of gang membership (Craig, Vitaro, Gagnon, & Tremblay, 2002; Esbensen & Huizinga, 1993; Hill, Lui, & Hawkins, 2001; Thornberry et al., 2003). In a longitudinal study that followed students from ages 10 to 18 years old, Hill and colleagues (1999) found that students who had tried marijuana at ages 10 to 12 were nearly four times more likely to join a gang at ages 13 to 18 years old. Nevertheless, most if not all studies on drug use and gang membership do not specifically refer to risky behaviors such as substance use on school property. Therefore, further research on school risk behaviors that may contribute to a gang member’s involvement with school violence is warranted.

Research has also found that risky peers can influence youth attitudes and behaviors, (Klein & Maxson, 2006). Some gang theorists believe that gang affiliation in adolescence is
primarily the result of deviant peer influences (Dishion, French & Patterson, 1995; Dishion, Nelson, & Yasui, 2005). Studies consistently find that affiliations with risky peer relations are a predictor of gang involvement (Craig, Vitaro, Gagnon, & Tremblay, 2002; Dukes, Martinez, & Stein, 1997; Esbensen & Huizinga, 1993; Esbensen, Huizinga, & Weiher, 1993; Hill, Howell, Hawkins, & Battin-Pearson, 1999; Maxson, Whitlock, & Klein, 1997; Maxson, Whitlock, & Klein, 1998). In a major longitudinal study, the Denver Youth Study, results indicated that both gang members and non-gang street offenders reported higher levels of commitment to delinquent peers, lower commitment to positive peers, and higher tolerance for criminal activity on the part of their peers (Esbensen & Huizinga, 1993).

Similarly, the school violence literature has also consistently found that risky peer groups play a significant role and tend to increase the likelihood of both school violence perpetration and victimization ([name deleted to maintain the integrity of the review process]; Chen & Astor, 2011a, 2011b). Regrettably, the gang and school violence literatures seldom refer to each other when describing the role of risky peers.

**Gang Membership and School-Related Protective Behaviors and Attitudes**

A protective school environment could theoretically mediate and reduce the potential negative external influences on school grounds (e.g., see Astor, Benbenishty & Estrada, 2009 as an example). However, Howell and Egley (2005) report that research identifying school protective factors that may reduce behaviors emanating from gang members and delinquency in schools is still in its infancy. Furthermore, the theoretical concepts of school connectedness and school support have yielded mixed empirical outcomes when examined as indicators of gang membership (Hill, Howell, Hawkins, & Battin-Pearson, 1999; Maxson, Whitlock, & Klein, 1997). For example, Hill and colleagues (1999) found that students with low levels of school
attachment and commitment in 5th and 6th grade were nearly twice as likely to join a gang during their 7th through 12th grade years. However, contrary to these findings, Maxson, Whitlock, and Klein (1997) found that school commitment or attachment and gang membership were not significantly associated in multivariate models that also included variables from domains besides the school. Even so, many of the studies are convenience samples with a very small number of schools. Consequently, associations between school climate issues and gang behaviors need to be interpreted cautiously. Further, examination using representative large-scale samples of how school connectedness and support mediate between the presence of gang members on school grounds and school violence outcomes are needed.

Educators and the media commonly argue that some students join gangs as a way of protecting themselves (Howell, 2010). If schools are seen as dangerous, joining a gang can offer protection. Similarly, if a student is consistently victimized at school they may consider joining a gang. However, perceptions of school safety have not consistently been associated as motivating factors for youth to join gangs (presumably for protection reasons) in previous research (Esbensen & Deschenes, 1998; Kent & Felkenes, 1998; Maxson & Whitlock, 2002; Maxson, Whitlock, & Klein, 1997; Maxson, Whitlock, & Klein, 1998; Whitlock, 2004). For instance, in one study there was a 78% increase in the likelihood of being a gang member when a student perceived the school environment to be hostile (Esbensen & Deschenes, 1998). Yet, in another study, the fear of being hurt before, during, or after school was similar among gang and non-gang members and was not a statistically significant predictor in multivariate analyses (Maxson, Whitlock, Klein, 1998). Therefore, how students who are gang and non-gang members vary in their perceptions of school safety in different school contexts is important to study. Moreover, a representative study exploring gang presence and the perceptions of school protective behaviors
would benefit the gang literature. This study will explore how school protective behaviors and attitudes interplay with gangs on school grounds and school violence behaviors.

A Theoretical Model to Explore How School-Based Variables Mediate the Influence of Gang Membership on School Grounds and School Violence Behaviors

In this inquiry, the main empirical question asked is, “How does the school context mediate the effects of gang member presence on campus with school safety outcomes.” Hence, this study will position the school at the center of a socio-ecological model to better comprehend how within-school variables mediate between gang member presence on school grounds and school violence behaviors in high schools.

As Figure 1 illustrates, this study explores if school victimization and school violence perpetration is directly associated with gender, ethnicity, gang members on school grounds, and school risk and protective behaviors and attitudes. This model is distinctive from that in prior research because it suggests that individual level variables (i.e., gender, ethnicity, and gang membership) will have both direct and indirect effects on the school violence behaviors (i.e., school victimization and school violence perpetration). It is predicted that the traditionally researched individual variables (i.e., gender, ethnicity, and gang membership) are mediated through two types of school context variables (i.e., school risk and protective behaviors and attitudes). For example, this model posits that gang members on school grounds will indirectly influence school violence perpetration and victimization by the way these students influence the overall climate of school risk and protective behaviors and attitudes on school grounds. Students who are gang members may contribute to overall higher levels of school-based peer risk behaviors, and in turn, these higher levels of overall peer risk levels contribute to higher levels of overall school violence perpetration.
Methods

This study analyzed data from the ongoing large-scale California Healthy Kids Survey (CHKS) conducted by WestEd for the State of California (see Austin & Duerr, 2005 for an overall description of the ongoing annual survey). The CHKS gathers demographic background information and investigates students’ health-related behaviors, tobacco use, alcohol use, drug use, violence behaviors, and school safety. The CHKS is administered to 7th, 9th, and 11th grade students in California school districts. Prior to the study being conducted, informed consent and proper institutional, district, and state-level permissions and reviews were completed.

The survey is conducted every year. However, only half of California districts get the survey every other year. Since particular districts are surveyed every other year, this study combines two academic school years to gain a census-like sample of all high schools for the entire State of California. The data used was collected in the 2005-2006 and 2006-2007 academic school years using the CHKS core module (CHKS Version 9). In this study, only high school students, in the 9th and 11th grades who are Latino, Black, or White, were selected. The resulting sample for this study consisted of 272,863 high school students.

Measurement

Given that the CHKS core module provides a comprehensive assessment of the school domain, latent variables for school violence victimization, school risk variables, and school protective variables were constructed using several items and scales that were created based on theoretical and empirical methods. The individual and scale items were conceptually and theoretically identified as one of three latent factors (school violence behavior, school risk behaviors and attitudes, and school protective behaviors and attitudes). An initial factor analysis that included all available variables in the data set confirmed that the participants’ self-reported
grades and meaningful participation items did not load on any of the latent factors and were therefore not included as school risk or protective behaviors and attitudes. A Confirmatory Factor Analysis (CFA) was carried out to measure whether the data fit the imposed latent variable structure. Table 1 presents the latent variables, the manifest variables, factor loadings, alphas, and items used to create the latent variables integrated in the structural equation model. Table 2 reports the means and standard deviations of the variables included in the model, separated by gender. It also displays the ranges of responses for each item and scale and how mean scale scores were calculated by summing up item scores and dividing by the number of items in each scale.

**Analytical Plan**

Analyses were conducted using the Mplus Version 6.11 statistical software program. The structural equation model for this study was conducted using the weighted least squares mean and variance adjusted estimation (WLSMV) due to the complex analysis of both categorical and continuous indicators (Muthén, du Toit, & Spisic, 1997). Cases missing complete information (0.01%, N = 3,852) were managed using the pairwise deletion procedure Mplus employs when applying the WLSMV estimator. The structural modeling analysis was completed using a weighting procedure to adjust the total of grade level respondents to represent the total district enrollment counts.

A confirmatory factor analysis (CFA) was first conducted to verify the goodness of fit of the measurement model and to assess the adequacy of the hypothesized associations between the measured indicators and underlying latent variables $[\chi^2 (44, N = 268,962) = 1587.962, p = .000; \text{RMSEA} = 0.016, \text{CI} = 0.015-0.017; \text{CFI} = 0.953]$. Goodness of fit was estimated using chi-square. However, since the chi-square is not a preferred fit index for this study due to its high
sensitivity to large sample sizes, the RMSEA and CFI indices were also reported (Bentler, 1990; Hu & Bentler, 1999). And since large sample sizes tend to produce statistically significant values for even minute direct and indirect effects, interpretation of the structural equation modeling results will follow previous research and be based on a combination of goodness of fit measures (for the entire model), beta weights and variance explained by the R-squares for particular paths, and the captured theoretical explained variance by the proposed model (Astor, Benbenishty, Zeira, & Vinokur, 2002; Benbenishty, Astor, Zeira, & Vinokur, 2002; Benbenishty & Astor, 2005; Chen & Astor, 2011a; 2011b; Klem, 2000). The overall analyses in the model are testing whether or not a relation is equal to zero. Although a large sample size provides the power to detect even the smallest associations, a significant p-value still confirms with 95-99.99% confidence that the value is not zero. However, it is important to consider both the statistical and practical significance of associations tested.

Results

Descriptive Statistics

The overall sample included in the analysis consisted of 269,011 high school students from California. Respondents are approximately evenly split by gender (47.8% male, 52.2% female). Nearly 49% of the respondents are Latino, 44.2% are White, and 6.6% are Black. Approximately 8.2% (N = 21,077) of the high school student sample reported that they consider themselves to be a member of a gang. Of those who report gang membership, 61.7% were male (N = 13,014), 38.3% female (N = 8,063), 58.4% were Latino (N = 12,428), 31.3% were White (N = 6,650), and 10.3% were Black (N = 2,190). Within each gender, 10.7% of all male and 5.9% of all female students surveyed considered themselves to be a member of a gang. Within
ethnicity groups, 13.2% of all the Black students, 9.8% of all the Latino students, and 5.7% of all the White students surveyed reported gang membership.

The Overall Model

Figure 1 represents results of the structural analysis for the overall high school sample. Results from the analysis indicate that the overall model had acceptable fit. The chi-square was $\chi^2(42, N = 269,011) = 1207.561, p = .000$. The RMSEA = 0.010, and the CFI was 0.951. To determine which variable has the strongest association and make the coefficients comparable, the standardized regression weights are reported, but the unstandardized regression weights, standard errors, critical ratios, p-values, and 95% confidence intervals are presented in Table 3.

The overall model explained 40% of the variance in school violence perpetration and nearly 24% of the variance in school victimization. Much of the explained variation is derived from the strong indirect contributions of gang membership on school risk behaviors and attitudes. The strongest association in the model is the direct path between school risk behaviors and attitudes and school violence perpetration ($\beta = 0.643$). The latent variable of school risk behaviors and attitudes also has a strong correlation with school victimization ($\beta = 0.408$). By contrast, school protective behaviors and attitudes are only weakly associated with school violence perpetration and school victimization ($\beta = -0.136, \beta = 0.069$, respectively).

The covariates of gender and ethnicity did not have strong direct or indirect associations with school violence perpetration or school victimization. Figure 1 shows that being male, Latino, or Black (Whites served as the reference category) is weakly associated with gang membership ($\beta = 0.151, \beta = 0.124, \beta = 0.128$, respectively). Being male is slightly positively correlated with school violence perpetration ($\beta = 0.146$) but has weak to no correlation with other variables. The statistically significant total effect from gender to school violence
perpetration is $\beta = 0.153$ and the total indirect effect was insignificant. The total effect from gender to school victimization is $\beta = 0.048$ and the total indirect effect is $\beta = 0.014$. Being Latino also had overall weak associations with most variables but it was slightly negatively correlated with school victimization ($\beta = -0.104$) and school protective behaviors and attitudes ($\beta = -0.211$). The statistically significant total effect from Latino to school violence perpetration is $\beta = 0.076$ and the total indirect effect is $\beta = 0.034$. The total effect from Latino to school victimization is $\beta = -0.038$ and the total indirect effect is $\beta = 0.066$. Being Black had weak correlations with most of the variables but did have a slight negative association with the level of school protective behaviors and attitudes ($\beta = -0.077$). The statistically significant total effect from Black to school violence perpetration is $\beta = 0.058$ and the total indirect effect is $\beta = 0.025$. The total effect from Black to school victimization is $\beta = 0.028$ and the total indirect effect is $\beta = 0.037$.

As expected, gang membership has a strong positive association with school-based risk behaviors and attitudes ($\beta = 0.469$). However, contrary to what was predicted, gang membership did not have a statistically significant direct correlation with both school perpetration and victimization. When considering meditational associations, gang membership on school grounds is indirectly associated with school violence perpetration through the influence of a wide array of school risk behaviors. The statistically significant total effect from gang membership to school violence perpetration is $\beta = 0.277$ and the total indirect effect is $\beta = 0.286$. The specific indirect effect from gang membership through school risk behaviors and attitudes to school violence perpetration is $\beta = 0.301$. Mediating associations also indicate that there is a statistically significant total effect from gang membership to school victimization ($\beta = 0.230$) and the total indirect effect is $\beta = 0.222$. School risk behaviors and attitudes mediated the effect between gang
membership on school grounds and school victimization and this specific indirect effect is $\beta = 0.191$.

Additionally, gang membership on school grounds is moderately influenced by school protective behaviors and attitudes ($\beta = -0.229$). School protective behaviors and attitudes are negatively associated with school victimization ($\beta = -0.136$), which means that students, even gang members, who feel connected, supported, and safe at school may be less likely to be victimized. Specific indirect effects from gang membership through school protective behaviors and attitudes to both school violence perpetration ($\beta = -0.016$) and school victimization ($\beta = 0.031$) were statistically significant but did not contribute much to the total effects.

Discussion

The findings of this study provide initial empirical evidence that explores the nexus between gang membership and school violence behaviors. Contrary to intuition and previous theory that insinuate gangs may be the reason for increases in violence within schools, this study reveals that gang membership did not have a direct relation with school violence perpetration or victimization. However, when a gang member partakes in school risk factors, such as truancy, substance use, and risky peers, the likelihood of school perpetration and victimization can increase. Therefore, how and with whom a gang member interacts with while in school can directly and indirectly effect the levels of school violence behaviors. This suggest that school administrators and pupil personnel services should focus their attention on reducing risk behaviors that include truancy, substance use, and risky peer interactions that are directly related to school violence. This approach would be more effective than punitive measures that solely target those students who are gang members.
This study provides support for the idea that school violence perpetration and victimization are associated with a complex set of risky behaviors that occur within the school environment (i.e., school risk factors) and is less associated in a direct manner with an individual’s gang membership, gender, or ethnicity. Although qualifying prior research and gang theory often describes an over-representation of ethnic minority males in gangs (Curry, Ball, & Decker, 1996; Curry, Ball, & Fox, 1994; Freng & Esbensen, 2007; Klein, 1995; Spergel, 1995), results in this study indicate that gender and ethnicity have weak associations with gang membership, overall school-based risk and protective behaviors and attitudes, and school violence behaviors. As Vigil’s (1988; 2002) multiple marginality framework suggests, gangs become a fulfilling replacement for many minority youth; however, the problem does not stem from one’s ethnicity or gender, but is a combination of numerous impressions that include frustrating school settings that fail to meet these students’ needs, which results in street socialization.

The results support the hypothesis that gang membership may significantly correlate with an increase in the level of school risk behaviors. This very strong relation was expected since prior research suggests that truancy, school substance use, and risky peers are all notable indicators of gang membership. It is well known that gang members engage in and associate with risky peers who often use drugs and ditch school (Craig et al., 2002; Hill, Lui, & Hawkins, 2001; Maxson, Whitlock, & Klein, 1998; Thornberry et al., 2003). Another expected finding is that gang membership most likely correlates with lower levels of school protective behaviors and attitudes for high school students. Additionally, school risk and protective behaviors and attitudes had strong indirect effects on gang member’s contribution to school victimization and school violence perpetration. These findings support the hypothesis that overall school violence
victimization and perpetration are associated with a host of socio-ecological school variables ([name deleted to maintain the integrity of the review process]). The findings from this inquiry suggest that theories, policies, and practices to reduce school violence in schools with gang members should focus more on strategies that improve within-school variables that reduce risk and elevate protective behaviors and attitudes.

Socio-ecological factors of a school have been found to play a substantial role in influencing school violence behaviors (Benbenishty & Astor, 2005; Cornell & Mayer, 2010; Jimerson & Furlong, 2006; Mayer & Furlong, 2010; Olweus, Limber, & Mihalic, 1999; Swearer, Espelage, Vaillancourt, & Hymel, 2010). The findings of this study show that school risk behaviors and attitudes have the greatest direct and indirect associations with school violence perpetration and school victimization. What this suggests is that schools with high truancy, substance use problems, and risky peers are possibly more likely to also have higher correlations with school violence victimization and perpetration incidents. Therefore, school violence perpetration and victimization may be more likely apparent if a school is ill-equipped with inadequate resources and has a problematic environmental and organizational structure that struggles to control truancy, substance use, and risky peer associations. Thus, theoretical and policy implications of this study suggest that socio-ecological factors of a school, such as the school’s population, supervision efforts, and ability to manage gang, truancy, substance abuse, and related issues, should play the most important role in school-based intervention development and implementation ([name deleted to maintain the integrity of the review process]; Olweus, Limber, & Mihalic, 1999). How gang members influence these risky climates on school grounds should be the focus of future empirical work. Disrupting the process that creates a risky school climate is critical for the reduction of school violence when gangs are present in schools.
Furthermore studies should focus on how protective factors can help in schools with gangs. Schools are in a prime position to impact a student’s choice of gang membership and school violence behaviors through positive protective factors that include a teacher or other adult providing a connection, support, and safety. By creating more student connectedness, increasing support from teachers and other adults, and perceptions of safety, fewer students will feel the need to turn to gang and violence. The findings indicate that school protective behaviors and attitudes are associated with school victimization and school violence perpetration for the overall model. As expected, school protective behaviors and attitudes have slightly lower correlations with school victimization. Thus, when a high school student feels connected, supported, and safe, the likelihood of school violence victimization may be weakened (Benbenishty & Astor, 2005; Cornell & Mayer, 2010; Jimerson & Furlong, 2006; Mayer & Furlong, 2010; Sweer, Espelage, Vaillancourt, & Hymel, 2010).

Currently, there are no evidence-based programs in schools that have demonstrated effectiveness in preventing or decreasing violent youth gang delinquency (Esbensen, Winfree, He, & Taylor, 2001). Though several gang prevention and intervention programs have been developed with positive intentions, they are frequently not informed by empirical research (Stinchcomb, 2002). However, there does exist a plethora of evidence-based programs that target school risk factors, and the findings of this study support the need to explore how effective these particular programs are at reducing school violence behaviors for all students, including those who are gang members. Further research that evaluates school risk and protective programs that differentiates factors that lead gang members who engage in school violence from those who refrain from such behavior is needed. Such knowledge would better prepare educators to promote successful strategies that target gang membership and school violence.
A limitation of this study is that the data collected is from a school-based survey using only self-reports from California students in the 9th and 11th grades. However, many gang and school violence scholars consider self-reports more reliable than police records, arrest rates, or observation ([name deleted to maintain the integrity of the review process]; Curry & Decker, 1998). Next, gang membership was measured using only one item. Although most gang studies rely on self-identification and use a single variable for gang membership (Bolland & Drummond, 1999; Bradshaw, 2005; Curry, 2000; Curry & Decker, 1998; Curry, Decker, & Egley, 2002; Decker, 1996; Decker & Van Winkle, 1994, 1996; Dukes, Martinez, & Stein, 1997; Eitle, Gunkel, & Van Grundy, 2004; Esbensen & Huizinga, 1993; Esbensen & Winfree, 1998; Winfree, Fuller, Vigil, & Mays, 1992), a more comprehensive list of items that capture information about a student’s degree and association of gang involvement, gang activities, gang peers, etc., would have provided a more judicious examination of gang membership. Another limitation is that there may be potential bias since many gang members may have been truant or just not at school during data collection, resulting in a possible under-representation of high-risk youth. Additionally, causality cannot be ascribed in this study since the cross-sectional nature of the data prevents arguments of causal-effect relations. Lastly, although the majority of the associations reported in the model were statistically significant, the variance accounted for in some of the dependent variables may be considered small. Therefore, future research should explore different models that include school risk and protective factors, which would account for a larger amount of explained variance. Studies should employ a multi-group modeling approach to compare gender and ethnicity on the directional and nondirectional linear relations and mediating effects within the structural model. Fitting the models separately may determine that the meditational process possibly differs across gender and ethnicity.
This study provides researchers, policy makers, and practitioners with empirical evidence that indicates school risk and protective behaviors and attitudes are an area that needs their attention. In particular, future studies should continue to examine gangs in the school context and the connection between gang membership and school violence. Longitudinal and multivariate studies are necessary to examine causal-effect associations between gang membership, school risk and protective factors, and school violence.
REFERENCES


Justice, Office of Justice Programs, National Institute of Justice.


<table>
<thead>
<tr>
<th>Latent variables</th>
<th>Manifest variables (alpha or factor loadings for overall model)</th>
<th>Items and possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity</td>
<td>“How do you describe yourself?”</td>
<td></td>
</tr>
<tr>
<td>Gang membership</td>
<td>“Do you consider yourself a member of a gang?”</td>
<td></td>
</tr>
<tr>
<td>School risk</td>
<td>Truancy (loading = .710)</td>
<td>“During the past 12 months, how many times did you skip school or cut classes?”</td>
</tr>
<tr>
<td>behaviors and</td>
<td>School substance use (α = .73, loading = .590)</td>
<td></td>
</tr>
<tr>
<td>attitudes</td>
<td>School protective behaviors and attitudes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>School connectedness (α = .82, loading = .849)</td>
<td>“I feel close to people at this school.”</td>
</tr>
<tr>
<td></td>
<td>School support (α = .91, loading = .701)</td>
<td>At my school, there is a teacher or some other adult…</td>
</tr>
<tr>
<td></td>
<td>School safety (loading = .821)</td>
<td>“I feel safe in my school.”</td>
</tr>
<tr>
<td></td>
<td>Risky peer approval (α = .85, loading = .707)</td>
<td>“How much would your friends disapprove of you…</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Table 1. Continued.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>------------------</td>
<td></td>
</tr>
<tr>
<td><strong>School victimization</strong></td>
<td><strong>School violence victimization</strong></td>
<td></td>
</tr>
</tbody>
</table>
| (α=.75, loading = .787) | “During the past 12 months how many times on school property…
…have you been pushed, shoved, slapped, hit, or kicked by someone who wasn’t just kidding around?”
…have you been afraid of being beaten up?”
…have you had mean rumors or lies spread about you?”
…have you had sexual jokes, comments, or gestures made to you?”
…have you been made fun of because of your looks or the way you talk?”
…have you had your property stolen or deliberately damaged, such as your car, clothing, or books?”
…have you been threatened or injured with a weapon (gun, knife, club, etc.)?”
…have you seen someone carrying a gun, knife, or other weapon?”  |
| **Discrimination motivated victimization** | “During the past 12 months, how many times on school property were you harassed or bullied for any of the following reasons…
…your race, ethnicity, or national origin?”
…your religion?
…your gender?
…because you are gay or lesbian or someone thought you were?”
…a physical or mental disability?”
…any other reason?”  |
| (α=.69, loading = .817) |  |
| **School violence perpetration** | “During the past 12 months how many times on school property…
…have you been in a physical fight?”
…have you damaged school property on purpose?”
…have you carried a gun?”
…have you carried any other weapon, such as a knife or club?”  |
| (α=.66) |  |
Table 2. Means and Standard Deviations by Gender for High School Sample.

<table>
<thead>
<tr>
<th>Item/Scale</th>
<th>Overall</th>
<th>Males</th>
<th>Females</th>
<th>Latino</th>
<th>Black</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>School Risk Behaviors &amp; Attitudes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truancy(^a)</td>
<td>0.56</td>
<td>0.68</td>
<td>0.54</td>
<td>0.68</td>
<td>0.58</td>
<td>0.68</td>
</tr>
<tr>
<td>School substance use(^b)</td>
<td>0.03</td>
<td>0.18</td>
<td>0.04</td>
<td>0.21</td>
<td>0.02</td>
<td>0.15</td>
</tr>
<tr>
<td>Risky peer behavior approval(^c)</td>
<td>1.68</td>
<td>0.84</td>
<td>1.81</td>
<td>0.90</td>
<td>1.56</td>
<td>0.77</td>
</tr>
<tr>
<td>School Protective Behav. &amp; Attitudes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School connectedness(^d)</td>
<td>3.12</td>
<td>1.03</td>
<td>3.10</td>
<td>1.05</td>
<td>3.13</td>
<td>1.01</td>
</tr>
<tr>
<td>School safety(^d)</td>
<td>3.33</td>
<td>1.03</td>
<td>3.30</td>
<td>1.09</td>
<td>3.35</td>
<td>0.97</td>
</tr>
<tr>
<td>School support(^e)</td>
<td>2.49</td>
<td>0.90</td>
<td>2.46</td>
<td>0.91</td>
<td>2.53</td>
<td>0.89</td>
</tr>
<tr>
<td>School Victimization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School violence victimization(^f)</td>
<td>0.15</td>
<td>0.37</td>
<td>0.16</td>
<td>0.38</td>
<td>0.14</td>
<td>0.35</td>
</tr>
<tr>
<td>Discrim. motivated victimization(^f)</td>
<td>0.04</td>
<td>0.21</td>
<td>0.05</td>
<td>0.23</td>
<td>0.04</td>
<td>0.19</td>
</tr>
<tr>
<td>School Violence Perpetration</td>
<td>0.09</td>
<td>0.30</td>
<td>0.13</td>
<td>0.37</td>
<td>0.04</td>
<td>0.21</td>
</tr>
</tbody>
</table>

Notes: 
\(^{a}\) On a scale: 0 = never, 1 = a few times a year, and 2 = at least once a month.
\(^{b}\) On a scale: 0 = no past month use, 1 = one to nine days, 2 = ten or more days.
\(^{c}\) On a scale: 1 = a lot, 2 = some, 3 = not much, 4 = not at all.
\(^{d}\) On a scale: 1 = strongly disagree to 5 = strongly agree.
\(^{e}\) On a scale: 1 = not at all true, 2 = a little true, 3 = pretty much true, 4 = very much true.
\(^{f}\) On a scale: 0 = never, 1 = once, and 2 = more than once.
Figure 1. Overall Theoretical Structural Equation Model for California High School Students.

Notes: Direct path lines with plus and minus signs in the model indicate the hypotheses in this study. Plus signs denote a positive association between the two variables and minus signs represent a negative association. The beta weights are indicated below each direct path line.
<table>
<thead>
<tr>
<th>Dependent variables</th>
<th>Male</th>
<th>Latino</th>
<th>Black</th>
<th>Gang membership</th>
<th>School risk behaviors and attitudes</th>
<th>School protective behaviors and attitudes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>b</td>
<td>SE</td>
<td>cr</td>
<td>p</td>
<td>CI</td>
</tr>
<tr>
<td>Gang membership</td>
<td>0.151</td>
<td>0.310</td>
<td>0.024</td>
<td>12.965</td>
<td>0.000</td>
<td>0.104, 0.198</td>
</tr>
<tr>
<td></td>
<td>β</td>
<td>b</td>
<td>SE</td>
<td>cr</td>
<td>p</td>
<td>CI</td>
</tr>
<tr>
<td>School risk behaviors and attitudes</td>
<td>0.029</td>
<td>0.012</td>
<td>0.005</td>
<td>-5.742</td>
<td>0.000</td>
<td>-0.064, -0.044</td>
</tr>
<tr>
<td>School protective behaviors and attitudes</td>
<td>0.012</td>
<td>0.011</td>
<td>0.012</td>
<td>-1.345</td>
<td>-0.017</td>
<td>0.000, 0.012</td>
</tr>
<tr>
<td>School violence victimization</td>
<td>0.017</td>
<td>0.053</td>
<td>0.003</td>
<td>-18.984</td>
<td>0.000</td>
<td>0.027, 0.039</td>
</tr>
<tr>
<td>School violence perpetration</td>
<td>0.093</td>
<td>0.096</td>
<td>0.005</td>
<td>20.339</td>
<td>0.000</td>
<td>0.013, 0.033</td>
</tr>
</tbody>
</table>

Notes: β = Standardized regression weights, b = Unstandardized regression weights, SE = Standard error, cr = Critical ratio, p = P-value, CI= 95% Confidence interval.