**Peer Victimization and Adolescent Adjustment: Does School Belonging Matter?**

*Recent research highlights the role of peer victimization in students’ adjustment across a variety of domains (e.g., academic, social), but less often identifies potential mediating variables. In the cur- rent study, we tested for direct effects from peer victimization to adolescents’ academic behavior and alcohol use, as well as indi- rect effects through school belonging. Adolescents from two large samples (middle school:* N *2,808; high school:* N *6,821) self-re- ported on peer victimization, school belonging, academic outcomes (GPA, school truancy), and alcohol use (lifetime, past 30 days). Two-group structural equation models revealed (a) direct and indirect paths from peer victimization to academic functioning; (b) indirect, but not direct, effects through school belonging for lifetime*

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*drinking; and (c) direct and indirect effects from peer victimiza- tion to current drinking. Findings implicate school belonging as a* *mediator between peer victimization and important outcomes in adolescence.*

*KEYWORDS adolescence, peer victimization, school belonging, academic performance, academic truancy, alcohol use*

Throughout the school day, students are exposed to a variety of academic and social experiences. Victimization in school, particularly at the hands of peers, is an unfortunately common experience for many youth. Peer victim- ization is an overarching term that involves repeated negative interactions, either physical or verbal, between two or more individuals; bullying, a spe- cific subset of victimization, is characterized by a notable power differential between two individuals in a dyad (Ladd, Kochenderfer, & Coleman, [1997](#_bookmark42)). Estimates of peer victimization among school children are high, affecting a sizable portion of the school-age population (Card & Hodges, [2008](#_bookmark13); Walton, [2005](#_bookmark68)). According to recent reports, 25% to 33% of school-age children in the United States report being bullied at school (National Center for Education Statistics and Bureau of Justice Statistics, [2010](#_bookmark51)). Since students do not always report threats or acts of violence to school authorities, actual rates of victim- ization in schools are likely even higher than those documented (Isernhagen & Harris, [2003](#_bookmark37); Nekvasil & Cornell, [2012](#_bookmark53); Pergolizzi et al., [2009](#_bookmark58)). Peer victim- ization is of particular concern because of its negative impact on students’ functioning. Beginning as early as kindergarten, peer victimization is asso- ciated with both internalizing and externalizing problems (Card & Hodges, [2008](#_bookmark13); Khatri, Kupersmidt, & Patterson, [2000](#_bookmark41)).

Although common across the school years, peer victimization is thought to peak in adolescence (Card & Hodges, [2008](#_bookmark13)). During this developmen- tal period, two domains of functioning have received considerable attention from both researchers and policy makers: illicit substance use and academic functioning. Initiation and continued use of illicit substances, particularly alcohol, is very common in adolescence (Johnston, O’Malley, Bachman, & Schulenberg, [2006](#_bookmark39)), along with declines in school motivation and engage- ment (Corpus, McClintic-Gilbert, & Hayenga, [2009](#_bookmark17); Otis, Grouzet, & Pelletier, [2005](#_bookmark57)). Given the profound impact of peer victimization on student outcomes within the educational context (e.g., Ladd et al., [1997](#_bookmark42)), and the fact that a substantial portion of victimization takes place during the school day, it seems reasonable to hypothesize that students who are victimized will also exhibit less adaptive school adjustment. Indeed, studies suggest that victimized children exhibit poor academic functioning (Lee & Cornell, [2009](#_bookmark43)). The effects of victimization, however, do not dissipate at the end of the school day. Rather, the deleterious effects of being victimized may influence

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students outside of the school context (i.e., spillover effect; e.g., Schwartz, Gorman, Duong, & Nakamoto, [2008](#_bookmark62)). One such activity that has received increasing attention in connection with peer victimization is initiation and continued use of illicit substances. A handful of studies exploring relations between peer victimization and alcohol use have usually found positive asso- ciations between the two, particularly for alcohol initiation among middle school samples (for a review, see Topper & Conrod, [2011](#_bookmark65)). Recent reviews call for an increase in attention paid to the posited associations between school-based victimization and alcohol initiation, as too few studies have explicitly examined these relations.

Increasing numbers of studies implicate peer victimization in the pre- diction of key developmental outcomes, both within and outside of the school domain. However, several important research questions remain unad- dressed. First, few empirical studies have proposed explanatory mechanisms for the relation between these constructs (i.e., peer victimization with academic-related outcomes or alcohol use). Depressive symptoms (Luk, Wang, & Simons-Morton, [2010](#_bookmark46)) and coping-related drinking motives (Topper, Castellanos-Ryan, Mackie, & Conrod, [2011](#_bookmark66)) have been identified as mediating variables in the victimization-alcohol-use association. However, researchers have yet to consider school-related constructs that may mediate the rela- tion between peer victimization and outcomes in adolescence. Additionally, researchers have not considered whether the same mediator is central to mul- tiple outcomes related to peer victimization. In other words, could declines in school belonging be the explanatory factor in the association of peer vic- timization with poor school performance as well as the propensity to use alcohol? If so, such information could potentially have important implica- tions for interventions developed to mitigate the deleterious effects of peer victimization. With these concerns in mind, one goal of the current study was to identify such a mediator. As victimization often takes place within the school context, we considered a school-based variable with important impli- cations for adolescents’ academic and nonacademic adjustment. We were particularly interested in investigating a school-based variable (i.e., percep- tions of school belonging) because it may be more amenable to intervention efforts.

Second, most studies examining the impact of peer victimization have been limited to a single age group, particularly middle school. While victim- ization is pervasive during middle school, it is also relatively normative as adolescents transition into high school (Card & Hodges, [2008](#_bookmark13)). Moreover, the outcomes examined in the current study (i.e., alcohol use and aca- demic adjustment) are central concerns of school administrators for both age groups. Thus, we expanded upon prior work by examining the interrelations among peer victimization, academic functioning, and alcohol use in sam- ples of both middle and high school students. Understanding the relation of victimization to outcomes across adolescence could have useful implications for research and educational practice.

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# School Belonging as a Mediator

A notable limitation of the literature on peer victimization and outcomes, particularly with respect to alcohol use, is that few studies have empirically tested potential mechanisms underlying such associations (for exceptions, see Luk et al., [2010](#_bookmark46); Topper et al., [2011](#_bookmark66)). In the present study, we examined students’ feelings of belonging to the school community as a potential medi- ator. We focused on school belonging as it: (a) is based in the educational setting, where peer victimization also occurs; (b) encompasses relationships with peers, an important buffer against the negative outcomes of peer vic- timization (e.g., Asher, Brachial, & McDonald, [in press](#_bookmark5); Ladd et al., [1997](#_bookmark42)); (c) has been identified in past studies as a powerful predictor of outcomes such as academic achievement and substance use (e.g., Ladd et al., [1997](#_bookmark42)); and (d) has been the successful target of past intervention efforts (e.g., Anderman, [2002](#_bookmark2)).

School belonging is a multifaceted construct and warrants a brief con- sideration of its operationalization. School belonging (Anderman, [2002](#_bookmark2); Faircloth & Hamm, [2005](#_bookmark22); Goodenow, [1993](#_bookmark28); Goodenow & Grady, [1993](#_bookmark29); Osterman, [2000](#_bookmark56); Roeser, Midgley, & Urdan, [1996](#_bookmark61)) has been labeled differ- ently by various researchers, and is closely related to constructs such as emotional engagement (Finn, [1993](#_bookmark24); Fredricks, Blumenfeld, & Paris, [2004](#_bookmark25)), perceptions of school climate (Waters, Cross, & Shaw, [2010](#_bookmark69)), school con- nectedness (Bernat & Resnick, [2009](#_bookmark9); Resnick et al., [1997](#_bookmark59)), school bonding (Jenkins, [1997](#_bookmark38)), and sense of relatedness (Connell & Wellborn, [1991](#_bookmark15); Deci & Ryan, [1985](#_bookmark18); Furrer & Skinner, [2003](#_bookmark27)). For the purposes of this study, we borrow from Libbey’s ([2004](#_bookmark45)) definition of belonging as encompassing posi- tive relationships with both peers and adults in the school context, as well as perceived feelings of safety and belonging at school. Accordingly, we refer to students’ perceived connection to school as school belonging. However, we acknowledge that the same or similar construct may be captured by different terminology, particularly those previously mentioned.

The broad concept of school belonging has demonstrated important associations with outcomes of interest to the present study (Libbey, [2004](#_bookmark45); McNeely & Falci, [2004](#_bookmark50); Stearns & Glennie, [2010](#_bookmark63)). As far back as Dewey ([1958](#_bookmark20)), school belonging has been posited as a critical determinant of stu- dents’ academic success and engagement (Fredricks et al., [2004](#_bookmark25); Osterman, [2000](#_bookmark56); Roeser et al., [1996](#_bookmark61)). Indeed, it is fundamental to sustaining important academic outcomes such as intrinsic motivation, which is strongly related to academic achievement (Deci & Ryan, [1985](#_bookmark18)). Consequently, low perceptions of school belonging could trigger negative academic outcomes, including school truancy or dropout. Along these lines, lower perceptions of belonging and safety at school may increase risk for disengagement, evidenced by decreased effort and subsequent worsening of academic performance or increases in school truancy (Goodenow & Grady, [1993](#_bookmark29)).

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Lower perceptions of school belonging have also been associated with alcohol use (Brookmeyer, Fanti, & Henrich, [2006](#_bookmark11); Rice, Kang, Weaver, & Howell, [2008](#_bookmark60)). Resnick and colleagues’ ([1997](#_bookmark59)) seminal work with seventh- through twelfth-grade students provided compelling evidence for the pro- tective role of school belonging (referred to in the study as school connectedness) against alcohol use. Feelings of school belonging were a more powerful predictor for lower rates of alcohol use than nonacademic contextual variables, including family support. However, it is important to note that the direction of causality has not been established between these two variables. For example, social control theory may suggest that delin- quent behavior, such as alcohol use, would give rise to poor school bonding (Hirschi, [1969](#_bookmark32); Wiatrowski, Griswold, & Roberts, [1981](#_bookmark70)). Thus, while we considered school belonging as a mediator in the current study, it is also quite possible that the relation between alcohol use and school belonging is bidirectional.

Finally, studies suggest an association between school belonging and peer victimization. Past research has linked perceptions of the school cli- mate to feelings of school safety, such that students who endorse low levels of school belonging are more likely to feel unsafe at school (Derosier & Newcity, [2005](#_bookmark19)). In addition, students who feel alienated from the school community may be less likely to report, or attempt to intervene in, instances of school victimization, perpetuating a culture of victimization in school (Brinkley & Saarnio, [2006](#_bookmark10)).

Based on past research, school belonging is a critical component of adolescent adjustment with potential implications for peer victimization and academic adjustment. As such, school belonging might be a mediating mech- anism connecting school-based peer victimization and academic outcomes (performance and truancy) and nonacademic outcomes (alcohol use). The current study adds to the well-established literature on school belonging by integrating work on school belonging and peer victimization with that focused on school belonging and alcohol use or academic-related outcomes.

# A Developmental Perspective

While substance use, academic achievement, and peer victimization remain substantial concerns across adolescence, there is a marked difference between the experiences of early and late adolescents (Graber, Brooks- Gunn, & Petersen, [1996](#_bookmark30)). In particular, students experience very different educational and social contexts in the transition from middle to high school (Eccles, Lord, & Buchanan, [1996](#_bookmark21)). However, associations between victimization and subsequent functioning have not been considered with these contextual changes in mind. Indeed, most studies examine students only in middle school or high school, with little consideration for potential

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developmental differences. Considering developmental shifts in the relation between important variables is critical in light of differences in emotional and social functioning for individuals in early and late adolescence (Bachman, Johnston, O’Malley, & Schulenberg, [1996](#_bookmark7); Eccles et al., [1996](#_bookmark21)).

In the present study, we examined the associations of peer victimiza- tion to academic functioning and substance use in middle and high school and whether differences would emerge between the two groups. There is evidence to suggest that differences may or may not be present. In support of potential differences, early and late adolescents differ notably in terms of some of the outcomes of interest in this study. For example, victimiza- tion is more common during middle school (Card & Hodges, [2008](#_bookmark13)), but alcohol use is much more normative in later adolescence (Johnston et al., [2006](#_bookmark39)). Academic truancy and dropping out is also more common in late adolescence, at an age when students can legally choose to drop out of school (Ianni & Orr, [1996](#_bookmark36)). These differences may translate into differen- tial associations between victimization and academic outcomes for middle and high school, an important factor to consider for intervention efforts in schools related to reducing substance use or bolstering academic perfor- mance. Conversely, many factors remain constant across significant school transitions, and continuity may be expected in the transition from middle to high school (Lerner et al., [1996](#_bookmark44)). For example, school belonging is a con- cern for students throughout early and late adolescence. Declines in school belonging begin across the middle school transition but continue throughout adolescence (Oelsner, Lippold, & Greenberg, [2011](#_bookmark54)). Thus, school belonging may be a critical mediating factor for both middle and high school students with respect to the impact of peer victimization. As such, victimization and adolescent functioning might be associated similarly for middle and high school students. We directly tested these two competing hypotheses in the present study.

# Current Study and Hypotheses

In the current study, we examined the association between peer victimiza- tion and maladaptive academic and alcohol outcomes. Direct paths from victimization to outcomes, as well as indirect paths through school belong- ing, were considered. Given past research, peer victimization was expected to positively relate to alcohol use, school truancy, and poor academic per- formance. School belonging was expected to be negatively associated with peer victimization and partially mediate the association of victimization with academic and alcohol-related outcomes. In addition, we examined potential developmental differences in the association between peer victimization and adolescent adjustment using two group models in middle and high school samples.

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# METHOD

Participants and Procedure

Full data on variables of interest were available for 2,808 middle school (*M*age 13.5, *SDage* 0.9) and 6,821 high school students (*M*age 15.8, *SDage* 1.2), constituting the final samples examined in the present study. Both

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samples were fairly gender balanced (middle school sample: 51.4% girls; high school sample: 48.5% girls) and students were represented equally across all grade levels (middle school: 51.2% seventh grade, 48.8% eighth grade; high school: 26.2% ninth grade, 26.1% tenth grade, 25.4% eleventh grade, 22.3% twelfth grade). The middle school sample was primarily White (64.8%) but also identified as Black*/*African American (3.3%), Hispanic*/*Latino (16.4%), Asian American (19.2%), Native Hawaiian*/*Pacific Islander (3.1%), American Indian*/*Alaskan Native (4.6%), or another racial or ethnic group (16.4%). Most students in the high school sample self-identified as White (63.9%), but also included a sizable portion of students who identified as Hispanic*/*Latino (11.0%) and Asian or Pacific Islander (16.1%). Smaller groups of stu- dents identified themselves as Black or African American (3.8%), American Indian*/*Native American (3.1%), or other. The middle school sample con- sidered here was also used in an article exploring the moderating role of gender on positive and negative social relationships with respect to initiation and continued use of illicit substances (i.e., alcohol, cigarettes, and mari- juana; Wormington, Anderson, Tomlinson, & Brown, 2012). In contrast to the Wormington et al. (2012) study, the current manuscript focused specifi- cally on (a) examining school belonging as a mediator of peer victimization to two distinct outcomes: academic and alcohol-related and (b) consider- ing the change in school belonging’ role as a function of developmental stage.

Participants were recruited as part of the California Healthy Kids Survey (CHKS; WestEd, 2009) from four middle schools and five high schools in a socioeconomically diverse school district in the San Diego, California area. The median household income and unemployment rate within the school district ($57,000 and 9%, respectively) are comparable to statewide rates. Data for this particular study were collected during the regular school cycle. Though the data were collected through the CHKS, we handled all aspects of data processing. Passive parental consent was received for 99% of stu- dents enrolled in the schools, and 95% of those students assented to take the survey. During school hours, assenting participants filled out an anony- mous self-report questionnaire, including questions in the present study. Survey instructions were administered in class by trained university research staff. Students who indicated that they had not answered items truthfully on the survey via a survey item or responded to questions inconsistently were dropped from both the middle and high school data sets.

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# Measures

All items were taken from the 2009 middle and high school versions of the CHKS (West Ed, 2009).

PEER VICTIMIZATION

Participants were asked to mark, on a 4-point scale, the frequency with which they had been the targets of peer victimization within the last 12 months (1 *0 times*, 4 *4 or more times*; WestEd, 2009; cf. McGee, Valentine, Schulte,

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& Brown, [2011](#_bookmark49); Tharp-Taylor, Haviland, & D’Amico, [2009](#_bookmark64); Wormington et al., 2012). Because we were interested specifically in victimization occurring on school property, these instances of peer victimization were limited to those that had taken place at school. Items assessed both victimization (*n* 8) and bullying (*n* 8). Victimization items included questions concerning both physical victimization (e.g., been pushed, shoved, slapped, hit, or kicked by someone who wasn’t just kidding around) and relational victimization (e.g., had mean rumors or lies spread about you). Bullying items queried students about being bullied for a variety of reasons, including being bullied due to race*/*ethnicity*/*national origin, religion, gender, sexuality, physical or mental disability, or any other reason. For bullying items, participants received the following definition: “you were **bullied** if *repeatedly* shoved, hit, threatened, called mean names, teased in a way you didn’t like, or had other unpleasant things done to you. It is **not bullying** when two students of about the same strength quarrel or fight [emphasis in original].”

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Past research has conceptualized and provided evidence for peer victimization as a multidimensional (e.g., Felix, Furlong, & Austin, [2009](#_bookmark23); Tharp-Taylor et al., [2009](#_bookmark64)) and unidimensional construct (e.g., Wormington et al., 2012). In another study using the same middle school sample as the current study, we provided evidence for one factor to best describe the vic- timization items using exploratory factor analysis (Wormington et al., 2012). To replicate these findings, we ran an exploratory factor analysis on the vic- timization items separately by gender, as well as age (i.e., middle school and high school samples). Results once again suggested that victimization items loaded onto a single dimension: all items loaded greater than .40, and the second factor had an eigenvalue less than one. Thus, we treated peer victimization as a single dimension in the current study. The final unitary scale displayed excellent internal reliability, with alphas of .92 and .97 in the middle and high school samples, respectively.

SCHOOL BELONGING

To assess school belonging, participants responded to five items from the Add Health School Connectedness scale included in the CHKS Middle School

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2009 Version (West Ed, 2009). Questions concerned how close participants felt to the school community (i.e., I feel close to people at this school; I am happy to be at this school; I feel like I am part of this school; the teachers at this school treat students fairly; I feel safe at this school). Participants answered all questions on a 5-point scale (1 *strongly disagree*, 5 *strongly agree*).

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Until recently, few studies have examined the psychometric proper- ties of the school connectedness scale. However, recent work by Furlong, O’Brennan, and You ([2011](#_bookmark26)) sought to test the reliability, concurrent validity, and unidimensionality of the scale within a large, ethnically diverse sample. Results suggest that the Add Health School Connectedness scale is reliable and valid, and represents a unidimensional construct. Findings from our sam- ple support this conclusion: Cronbach’s alphas of .87 and .92 were obtained for the middle and high school samples in our study, respectively. In addi- tion, we ran an exploratory factor analysis to determine whether a one-factor structure best fit the data. One factor emerged for both samples, with all items loading greater than .40 and the second factor displaying an eigenvalue less than 1.

ACADEMIC VARIABLES

For a measure of academic performance, students self-reported their grade point average on an 8-point scale (1 *mostly As*, 8 *mostly Fs*), with lower values representing better academic performance (*M*middle school 2.03, *SD*

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1.38; *M*high school 2.24, *SD* 1.45). Self-reported GPA has been found to highly correlate with actual grades and has been used recently in a number of studies (e.g., Trautwein et al., [2012](#_bookmark67)). For structural equation modeling, academic performance was reverse coded so that high values would rep- resent more adaptive outcomes. For school truancy, students indicated the number of times they had missed school in the past 12 months on a 6-point

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scale (1 = *0 times*, 6 = *more than once a week; M*middle school = 0.30, *SD* =

0.74; *M*high school = 0.68, *SD* = 1.09).

ALCOHOL USE VARIABLES

To assess participants’ alcohol use, we drew items from the Monitoring the Future Study survey (Anderson & Brown, [2011](#_bookmark4); Johnston, O’Malley, Bachman, & Schulenberg, [2010](#_bookmark40)). Specifically, we were interested in ado- lescents’ lifetime alcohol use (defined as any consumption of more than a sip of alcohol over the participants’ lifetime) and current alcohol use (defined as instances of consumption over the past 30 days). Using a frequency scale, participants reported the number of days in which they consumed alcohol (*0 days, 1-2 days, 3-9 days, 10-19 days, 20 or more days*) over their lifetime for lifetime use and over the past 30 days for current use.

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# Data Analysis Plan

Structural equation modeling was used in the present study because it allows for multiple dependent variables and partitions out measurement error by creating latent factors of variables (Austin & Calderon, [1996](#_bookmark6); Byrne, [2012](#_bookmark12)). All analyses were run using MPlus Version 5.0 (Muthén & Muthén, [2010](#_bookmark52)). To assess the source of model misfit, a two-step process of assessing the measurement and structural models was employed (Anderson & Gerbing, [1988](#_bookmark3)). Multiple fit indices were used to assess model fit, including compar- ative fit index (CFI; Bentler, [1990](#_bookmark8)), Tucker-Lewis index (TLI; Hu & Bentler, [1998](#_bookmark34)), root mean square error of approximation (RMSEA; Marsh, Balla, & McDonald, [1988](#_bookmark48)), and standardized root mean square residual (SRMR; Hu & Bentler, [1998](#_bookmark34)). Latent variables of peer victimization and school belong- ing were created using indicator variables; physical and relational indicators of peer victimization were used to create a single latent victimization vari- able, consistent with past research (Topper et al., [2011](#_bookmark66)). All other variables included in the models were manifest (i.e., directly observed) variables. Missing data patterns were examined using MPlus, and values were imputed using full information likelihood method (Muthén & Muthén, [2010](#_bookmark52)). Indirect and direct effects were examined using the MODEL INDIRECT command in MPlus (Muthén & Muthén, [2010](#_bookmark52)).