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Pathways From School Suspension to Adolescent Nonviolent Antisocial Behavior in Students in Victoria, Australia and Washington State, United States

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Abstract

School suspension is associated with school drop-out, crime, delinquency, and alcohol and other drug use for the suspended student. Important research questions are how academic and related factors are relevant to the school suspension process and the generality of the process in different sites. State representative samples of Grade 7 students (N = 1,945) in Washington State, United States and Victoria, Australia were followed from 2002 to 2004. In both states, Grade 7 school suspension was associated with higher rates of nonviolent antisocial behavior and suspension 24 months later, before Grade 8 factors were entered into the model. Relevant factors were Grade 8 low school grades and association with antisocial peers, as well as Grade 8 antisocial behavior in Washington State only. The implications of these findings for the ways in which suspension is used in schools are outlined.

Keywords

antisocial behavior; school suspension; school exclusion; predictors; adolescence

The management of challenging nonviolent student behaviors, including talking back to the teacher, disruptive classroom behavior, and truancy, is an issue that most schools face. One management tool available is exclusion from school through the use of suspension and expulsion. Research on the impact of school exclusion has been growing, particularly in the United Kingdom (U.K.) and the United States (U.S.) where it has been documented that the rates of school suspension and expulsion are increasing (American Academy of Pediatrics Committee on School Health, 2003). Students who receive school suspension and expulsion are often already disadvantaged (e.g., they belong to an ethnic minority group or are of low socioeconomic status), and the majority are males (Skiba & Rausch, 2006a, 2006b; Vavrus & Cole, 2002). School suspension and expulsion have been associated with negative consequences for the students excluded from school. For example, those who are suspended are at higher risk of academic failure and school dropout (Arcia, 2006), disengagement from school (Butler, Bond, Drew, Krelle, & Seal, 2005), and failure to graduate on time (Mendez, 2003). They are also more at risk for student alienation, alcohol and drug use, and further antisocial behavior (American Academy of Pediatrics Committee on School Health, 2003; Costenbader & Markson, 1998; Hemphill, Heerde, Herrenkohl, Toumbourou, & Catalano, in press; Hemphill et al., 2009; Hemphill, Toumbourou, Herrenkohl, McMorris, & Catalano, 2006), possibly extending from lack of supervision during school suspension, increased exposure to peers involved in antisocial behavior, as well as effects on school performance and completion and student attitudes toward antisocial behavior. Further, suspensions have not been found to reduce future office referrals for problem behavior (Tobin & Sugai, 1996), and, in fact, increase the likelihood of future suspension (Mendez, 2003). Although some research on this topic exists, relatively few studies examine the academic and related factors

that are relevant to the process of school suspension. Further, there is virtually no research on the generality of the suspension process in different sites.

This paper examines the academic and related factors that are relevant to the process of school suspension in two different sites. Four academic and related factors relevant to the suspension process are studied, after controlling for previous nonviolent antisocial behavior and school suspension in Victoria, Australia, and Washington State, United States. These factors were selected for examination given the potential influence of school suspension on them and the effect they, in turn, may have on nonviolent antisocial behavior.

Academic and Related Factors Relevant to the School Suspension *Process*

The first factor considered in this paper is the potential interruption school suspension can bring to students' academic progress and school commitment. Both low school grades and low school commitment are associated with challenging student behaviors. These associations fit with control theory which postulates that individuals who have more to lose in areas such as future benefits through school completion are less likely to engage in antisocial behavior (Hirschi & Gottfredson, 1995). Hence, students who are struggling with school performance are less likely to perceive benefits from finishing school and may instead engage in antisocial behavior.

Another important factor in the process of school suspension is that it can lead young people to feel alienated from the school setting that rejected them and to become involved with antisocial peers. Differential association theory postulates that a young person commits antisocial behavior when in the company of others who endorse and reinforce the behavior (Shoemaker, 2004; Sutherland, 1947). Antisocial behavior is learned through social interactions with others that influence values, attitudes, techniques, and motives. Learning occurs most readily from close friends, intimate partners, and family members with whom an individual spends time. Students suspended from school have more time to interact with antisocial peers who are not attending school. Peer involvement is particularly likely when parents are working or otherwise unable to monitor the whereabouts and social interactions of their children during the suspension period.

The experience of being suspended from school may promote favorable student attitudes to antisocial behavior. For example, for some young people who find school difficult or who are bored at school, school suspension may provide an opportunity to have a day away from school, engaging in activities more interesting to him/her, and in the absence of immediate negative consequences antisocial behavior is rewarded rather than punished. This is likely to increase positive expectancies and attitudes and in this way increase student motives for participation in antisocial behavior.

Cross-Site Investigations

Although broadly similar in population size and student demographic characteristics (McMorris, Hemphill, Toumbourou, Catalano, & Patton, 2007), schools in Washington State and Victoria differ in their policies addressing problem behavior (i.e., antisocial behavior, substance use). At the time of the current study (2002), in Victorian schools the emphasis was on ensuring that disciplinary actions did not negatively impact on students' studies, and *suspension* from school was not usually implemented unless other disciplinary measures had been unsuccessful (Directorate of School Education, 1994). The emphasis was on discipline rather than punishment. The code of conduct for students set out ways of highlighting and promoting positive student behavior, as well as detailing discipline procedures (Directorate of School Education, 1994). In contrast, a zero tolerance approach (e.g., school suspension or expulsion) toward preventing challenging student behavior

characterizes Washington State (consistent with other areas of the United States) (Casella, 2003). Consistent with these policy differences, students report more school suspension and police arrests in Washington State relative to Victoria (Hemphill et al., 2007; Hemphill, Toumbourou, Herrenkohl, McMorris, & Catalano, 2006).

The stated policies regarding the use of school suspension differ in Washington State and Victoria. Likewise, the policy issues debated on the use of suspension are also different. For example, in Victoria, there are concerns that supportive approaches are a “soft” method for handling challenging student behaviors and there are calls to move towards a more punitive, zero tolerance approach to send a clear message to students about what behaviors are acceptable. In Washington State, there are groups advocating for approaches other than zero tolerance to be used; in particular, approaches that allow flexibility in school responses to challenging student behaviors. In the future, it is possible that the state policies on school suspension may shift closer towards one another. Common to the policy issue debates in both states is a concern that students who are suspended from school are already disadvantaged and excluding them from school may only compound their disadvantaged status given the unintended negative consequences of suspension.

The Current Paper

This paper examines the relevance to the suspension process of the academic and related factors outlined above in Victoria and Washington State, after controlling for previous nonviolent antisocial behavior. Here the goal is to examine the conditional effects of the Grade 7 and 8 variables after partialing out the effects of nonviolent antisocial behavior within and over Grades 7 and 8. In this paper we draw on data from the International Youth Development Study (IYDS), a cross-site study of the development of substance use and related problem behaviors. State-wide representative samples of approximately 1,000 students at each of three grade levels, 5, 7 and 9, in Victoria, Australia and Washington State, U.S. were recruited into the study for a total sample of 5,769 students. This paper reports analyses of three waves of data from the original Grade 7 sample in both states (n = 1,945). In this paper, we focus on nonviolent antisocial behavior as this is more common in community samples such as the IYDS and in school communities and can be an important precursor of later more serious antisocial behavior.

Research Questions

1. Are there associations between school suspension and nonviolent antisocial behavior measured in Grade 7 and outcomes of these same constructs measured in Grade 9, and are these associations found in both Victoria and Washington State?
2. Do the academic and related factors relevant to the process of school suspension and its association with subsequent nonviolent antisocial behavior include one or more the following measured in Grade 8: low school commitment, low school grades, students’ interactions with antisocial peers, students’ nonviolent antisocial behavior, and students’ favorable attitudes to antisocial behavior, after controlling for previous engagement in nonviolent antisocial behavior?
3. Are pathways to Grade 9 outcomes comparable in the two states?

Method

Participants

Sampling, recruitment, and survey administration procedures were matched across states. To obtain state-representative samples, a two-stage cluster sampling approach was used for

school recruitment in 2002. In the first stage, within each state and grade level, public and private schools containing Grades 5, 7, or 9 were randomly selected using a probability proportionate to grade-level size sampling procedure (Kish, 1965). In the second stage, one class was randomly chosen at each school (McMorris, Hemphill, Toumbourou, Catalano, & Patton, 2007). The analyses in this paper focus on the middle (Grade 7) cohort because data was collected from this cohort from three annual surveys in both states.

Written parental consent was obtained for students to participate in the study and for parents' own participation in a short telephone interview. Students gave their consent to participate on the day of the survey. For Grade 7 students, classes in Washington State yielded a total of 1,226 eligible students, of whom 961 (78.4%) consented to and participated in the survey. In Victoria, 1,301 Grade 7 students were eligible for consent and survey administration, of whom 984 (75.6%) consented and participated. Retention rates in the IYDS in both states were 99% at 12-month follow-up and 99% (Washington) and 98% (Victoria) at 24-month follow-up.

In each state, the Grade 7 cohort was composed almost entirely of 12- and 13-year-olds (Victoria $M = 12.9$, $SD = 0.4$; Washington $M = 13.1$, $SD = 0.4$). Males and females are equally represented in each cohort. In terms of ethnicity, 65% of students in Washington State described themselves as White, 16% as Hispanic, 6% as Asian/Pacific Islander, 6% as Native American, 4% as African American, and 3% reported belonging to other ethnic groups. In Victoria, the majority of students described themselves as Australian (91%), 6% as Asian/Pacific Islander, 1% as Aboriginal or Torres Strait Islander, less than 1% each as African or Spanish, and 1% reported belonging to other ethnic groups.

Procedure

To achieve school grade level and seasonal equivalence, in each year of the study surveys were administered from February to June in Washington State and from May to November in Victoria by study staff. Staff members from both states were trained in a single protocol. Surveys were group administered in classrooms during a 50- to 60-minute period; students absent from school on the day of the survey were administered surveys later under the supervision of trained school personnel or, in a small percentage of cases (less than 3%), over the telephone by study staff. Upon survey completion in each year of the study, students in Washington State received $10. In Victoria, students received small gifts: in Grade 7, a pocket calculator regardless of participation upon return of parental consent forms to their teacher, in Grade 8 a stress ball, and in Grade 9 a tricolored highlighter.

Research protocols were approved by the Institutional Review Board at the University of Washington and the Ethics in Human Research Office at the Royal Children's Hospital in Victoria. In Washington State, permission to recruit schools was obtained from school districts and then from principals. In Victoria, before approaching individual schools, permission to conduct the research in schools was first sought from the Department of Education and Training for government (public) schools and from the Catholic Education Office for some private schools, and then from principals.

Measures

Measures of nonviolent antisocial behavior, school suspensions, and academic and related factors on the three annual student surveys were drawn from the *Communities That Care* self-report survey which has been found to have acceptable psychometric properties (Arthur, Hawkins, Pollard, Catalano, & Baglioni, 2002; Glaser, Van Horn, Arthur, Hawkins, & Catalano, 2005; Pollard, Hawkins, & Arthur, 1999). The survey has been successfully

adapted for use in Victoria (Bond, Thomas, Toumbourou, Patton, & Catalano, 2000; Bond, Toumbourou, Thomas, Catalano, & Patton, 2005).

Nonviolent Antisocial Behavior—Here we focus on nonviolent antisocial behavior as this is more common in community samples such as the IYDS and in school communities and can be an important precursor of later more serious violent antisocial behavior. Four items measured student engagement in nonviolent antisocial behavior in the past year in the annual surveys. These items included whether the student had stolen something worth more than $5 U.S./$10 Australia (AUD), sold illegal drugs, stolen or tried to steal a motor vehicle such as a car or motorcycle, and had been drunk or high at school. Response options to these items ranged from *Never* to *40 or more times*, on an 8-point scale. After establishing that the distribution of scores on this measure was skewed, a dichotomous measure was created for nonviolent antisocial behavior at each wave; nonviolent antisocial behavior was present (score of 1) if students reported any of the four behaviors one or more times, and absent (score of 0) if students responded “never” to all four questions.

School Suspension—Students reported in all three surveys how many times in the past 12 months they had been suspended from school (*Never* to *40 or more times* on an 8-point scale). At each survey, scores were recoded as present (students had been suspended one or more times in the past year) or absent (students had not been suspended in the past year) to form a dichotomous measure of school suspension.

Academic and Related Factors—The academic and related factors that may be relevant to the school suspension process were measured in Grade 8 and included low school grades, low commitment to school, student association with antisocial peers, and student attitudes favorable towards antisocial behavior. The mean score on each factor was calculated. For all factors higher scores reflect more of the construct.

Low school grades was measured using two items; one asking students what their grades/marks were like last year, putting all of their grades together (rated on a 5-point scale from *very good* to *very poor*), and another item asking students whether their school grades are better than the grades of most students in their classes (rated on a 4-point scale from *definitely yes* to *definitely no*). Scores on the former item were rescaled so that scores ranged from 1 through 4. The correlation between the two items in Grade 8 was 0.56 (Washington) and 0.58 (Victoria).

Low commitment to school comprised six items that asked students the following: how many whole days in the last 4 weeks had been missed due to skipping school (rated on a 7-point scale ranging from *none* to *11 or more*); how often the student feels that the schoolwork assigned is meaningful and important (rated on a 5-point scale from *almost always* to *never*); how interesting most of the students’ school subjects are to them (rated on a 5-point scale from *very interesting* to *very boring*); how important students think the things they are learning in school will be for later life (rated on a 5-point scale from *very important* to *not at all important*); and how often in the past year the student hated being in school (rated on a 5-point scale from *never* to *almost always*) and tried to do his/her best work in school (rated on a 5-point scale from *almost always* to *never*). The item asking about skipping school was rescaled so that scores ranged from 1 to 5 to be consistent with other items. Cronbach alphas in Grade 8 for low school commitment were 0.89 (Washington State) and 0.88 (Victoria).

Student association with antisocial peers was assessed using eight items that asked students, in the past year, how many of their best friends had been suspended from school, carried a weapon, stolen something worth more than $5 U.S./$10 AUD dollars, sold illegal drugs,

stolen or tried to steal a motor vehicle such as a car or motorcycle, been arrested, dropped out of school, and attacked someone with the idea of seriously hurting them. All items were rated on a 5-point scale ranging from *none of my friends* to *4 of my friends*. Cronbach alphas in Grade 8 were 0.81 (Washington State) and 0.79 (Victoria).

Student favorable attitudes toward antisocial behavior was measured using five items that asked students how wrong they thought it was for someone their age to engage in the following behaviors: stay away from school all day when their parents think they are at school; steal something worth more than $5 U.S./$10 AUD dollars; pick a fight with someone; attack someone with the idea of seriously hurting them; and take a weapon to school. These items were all rated on a 4-point scale ranging from *very wrong* to *not wrong at all*. Cronbach's alpha in Grade 8 was 0.82 for both states.

Demographic Characteristics—Demographic characteristics included in this study were gender and family welfare status (assessed during a telephone interview with one of the students' parents, usually the mother). In Victoria, the parent/guardian was asked, "In the past year, have you or your partner had a health care concession card?" In Washington, a similar item was included, "Over the past year, has anyone in the household received any government assistance, such as food stamps, TANF (formerly AFDC), welfare, unemployment assistance, or free or reduced-price lunches?" In this item, TANF refers to Temporary Assistance for Needy Families and AFDC refers to Aid to Families with Dependent Children. Response options were "Yes" (coded 1) and "No" (coded as 0). There were no significant chi-square differences ($p > .05$) in welfare status in the two states. It was important to control for these measures in the analyses given that higher rates of school suspensions are reported in males and students from low socioeconomic backgrounds (Department for Children Schools and Families, 2008; Skiba & Rausch, 2006a, 2006b).

Honesty—A single measure of honesty (*yes*/*no*) was used, calculated from student responses to three items that asked: a) how honest the student was when filling out the survey (*all of the time*, *most of the time*, *some of the time*, *once in a while*, or *not honest at all*); b) if the student reported using a fictitious drug ever, or in the past 30 days; or c) if the student reported using illicit drugs on more than 120 occasions in the past 30 days. In total, there were 27 students who were "dishonest." The data of students who are "honest" were analyzed in this paper: 957 students in Washington State and 961 Victorian students.

Analyses

Multiple-Group Path Analysis—A multiple-group approach in Mplus (version 6) (Muthén & Muthén, 1998–2010) was used to assess similarities and differences in relations among the measured variables for the two state samples. To determine model fit, the chi-square test statistic, as well as goodness-of-fit indices including the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI) and the root-mean-square error of approximation (RMSEA) were considered. A nonsignificant chi-square test indicates a fit between a hypothesized model and empirical data (Dumenci & Achenbach, 2008). Values for CFI and TLI greater than .95 reflect an excellent fit (Hu & Bentler, 1999; Yu, 2002), while a RMSEA values of .05 or less also indicates a close fit (Brown & Cudeck, 1993).

The analyses controlled for gender, family welfare status, and Grade 7 and 8 nonviolent antisocial behavior. Figure 1 shows the conceptual model that guided the model tests. In the model, factors measured in Grade 8 were regressed on all Grade 7 predictors. Grade 9 outcomes were regressed on Grade 7 and 8 variables. A model without Grade 8 factors was examined as a first step to determine direct effects of Grade 7 school suspensions and nonviolent antisocial behavior on those same variables in Grade 9.

To examine the extent to which the effects of suspensions and nonviolent antisocial behavior in Grade 7 on later outcomes were comparable across the two states, we systematically constrained paths to be equal, one by one, for the two samples. An unconstrained multiple-group model provided freely estimated effects and an overall measure of model fit to which the results of the constrained models could be compared. The freely estimated model also allowed a comparison of the strength of relationships among constructs for the two states. The chi-square difference test in MPlus was used to determine overall changes in model fit when individual path constraints were imposed (Muthén & Muthén, 1998–2010).

Treatment of Missing Data—Across all of the variables used in the analyses, the level of missing data was relatively low (less than 5%). In MPlus there are several options for the estimation of models with missing data. To account for the categorical nature of certain latent variable indicators, parameter estimates were derived using the weighted least squares means variance (WLSMV) estimator, which also incorporates missing data procedures to maximize the use of available data. Model fit was assessed using the mean- and variance-adjusted chi-square test statistic.

Results

Descriptive Statistics for Variables Included in the Analyses

Table 1 shows the descriptive statistics for all of the variables included in the analyses. Rates of nonviolent antisocial behavior were significantly higher in Washington State boys than Victorian boys in all 3 years of the study. A similar pattern of results was found for the total sample. More Washington State girls reported engaging in nonviolent antisocial behavior than their Victorian counterparts at Grade 9 only.

Rates of suspension were higher in Washington State than Victoria in Grade 7 for males, females, and the total sample, with rates of 19% for Washington males. There were no state differences in rates of school suspensions in Grade 9. For the Grade 8 factors, there were state differences in school commitment and in student favorable attitudes towards antisocial behavior, with Victorian students showing lower school commitment and more favorable attitudes toward antisocial behavior. For association with antisocial peers, mean scores were higher for Washington State females and the total sample compared with Victoria.

Correlations Between Study Variables

The correlations between study variables for each state are presented in Table 2. Where both variables are continuous, the values reflect Pearson correlations, tetrachoric correlations where both variables are dichotomous, and a biserial correlation for correlations involving one dichotomous and one continuous variable. In general, correlations were in the low to moderate range across all variables except gender. Gender was only associated with two study variables in Washington State (being female was less associated with Grade 8 favorable attitudes to antisocial behavior and Grade 9 suspension), but with four variables in Victoria (Grade 8 low school commitment, Grade 8 interaction with antisocial peers, Grade 8 favorable attitudes to antisocial behavior, and Grade 9 suspension). The correlations on which the absolute value for Washington State was higher than Victoria included Grade 7 suspension and family welfare status, being male and Grade 7 nonviolent antisocial behavior, Grade 7 nonviolent antisocial behavior and family welfare status, Grade 7 and Grade 9 nonviolent antisocial behavior, Grade 8 nonviolent antisocial behavior and family welfare status, and Grade 8 nonviolent antisocial behavior and Grade 9 suspension. In Victoria relative to Washington State, there were higher absolute values of correlations between a range of variables including Grade 7 suspension and Grade 8 low school commitment, Grade 7 suspension and Grade 9 suspension, Grade 7 nonviolent antisocial

behavior and Grade 8 low school commitment, being male and Grade 8 interaction with antisocial peers, being male and Grade 8 favorable attitudes to antisocial behavior, being male and Grade 9 suspension, and family welfare status and Grade 8 interaction with antisocial peers.

Path Analysis

Firstly, school suspension and nonviolent antisocial behavior at Grades 7 and 9, as well as gender and family welfare status were entered into a path model. This model showed structural invariance, indicating that the strength of the path coefficients did not significantly differ between the states. As hypothesized, Grade 7 suspensions predicted Grade 9 suspensions and nonviolent antisocial behavior in the Victoria (VIC) and Washington State (WASH) samples (see Table 3). Additionally, Grade 7 nonviolent antisocial behavior was significantly predictive of Grade 9 nonviolent antisocial behavior and suspensions in Victoria and Washington State.

Next, a full path analysis including the Grade 8 variables was performed. This was conducted to examine the structural paths between Grade 7 suspensions and Grade 8 factors; and between Grade 8 factors and the Grade 9 outcomes, controlling for previous nonviolent antisocial behavior, as well as gender and family welfare status. We also examined direct effects of Grade 7 variables on Grade 9 outcomes after accounting for Grade 8 factors. The final model included additional paths from family welfare status to Grade 8 low school grades, low school commitment, interaction with antisocial peers, and nonviolent antisocial behavior. Paths were also added from gender to interaction with antisocial peers and favorable attitudes to antisocial behavior. This model showed excellent model fit (x^2) = 10.88, $df = 8$, $p > .05$; CFI = .99; TLI = .99, RMSEA = .020). Table 4 shows the standardized regression coefficients for each path in each state. Highlighted rows in the table are those for which tests of the paths were significantly different between the two states, as evidenced by significant changes in model chi-square values derived through “difference testing” in the MPlus program.

As shown in Table 4, most paths from Grade 7 suspensions and nonviolent antisocial behavior to Grade 8 factors are statistically significant in both states. Furthermore, family welfare status positively predicted low school grades, low school commitment, interaction with antisocial peers, and nonviolent antisocial behavior. Tests of the differences in magnitude of the coefficients for the two states showed that Grade 7 nonviolent antisocial behavior is more strongly associated with Grade 8 low school grades ($\chi^2(1) = 3.94$, $p < .05$) and low school commitment ($\chi^2(1) = 9.10$, $p < .01$) for the Victorian compared to Washington State students. Furthermore, family welfare status was more strongly associated with low school commitment for Victorian than Washington State students ($\chi^2(1) = 6.83$, $p < .01$). Boys in Victoria were more likely to report interaction with antisocial peers than Victorian girls, while this gender difference was not significant for Washington State students ($\chi^2(1) = 4.02$, $p < .05$). Similarly, the gender effect for favorable attitudes to antisocial behavior was significant for Victoria but not for Washington State, with Victorian boys more likely to report favorable attitudes to antisocial behavior than Victorian girls, ($\chi^2(1) = 4.85$, $p < .05$).

The paths from Grade 8 academic and related factors to Grade 9 outcomes also generally revealed similar effects across the states. The exceptions were that interaction with antisocial peers was more strongly associated with both Grade 9 suspension ($\chi^2(1) = 9.34$, $p < .01$), and Grade 9 antisocial behavior ($\chi^2(1) = 3.88$, $p < .05$) for Victorian students than Washington State students. Furthermore, Grade 8 nonviolent antisocial behavior was more strongly predictive of Grade 9 suspension for Washington State students than Victorian students ($\chi^2(1) = 8.50$, $p < .01$).

In the full model, the only Grade 7 predictor to maintain a significant direct association with the Grade 9 outcomes was suspension, predicting suspension at Grade 9. There were no significant differences between states in the strength of these path coefficients. The relationship between Grade 7 school suspension and Grade 9 nonviolent antisocial behavior became nonsignificant when the Grade 8 variables were included in the model.

In summary, the tests of structural invariance showed that the paths are very similar in the two states, including the effects of Grade 7 suspensions and nonviolent antisocial behavior on those same variables in Grade 9. This suggests that the factors relevant to the process of suspension are similar in Victoria and Washington State. However, analyses also yielded several important differences in the strength of associations, indicating that some processes may differ in the two states, particularly those for early (Grade 7) nonviolent antisocial behavior. Analyses showed that Grade 7 nonviolent antisocial behavior was more strongly related to Grade 8 low school grades and low school commitment in Victoria compared to Washington State. Furthermore, nonviolent antisocial behavior and interaction with antisocial peers showed different associations with Grade 9 suspension and antisocial behavior for Victorian and Washington State students.

Discussion

To the authors' knowledge, this is the first study of its kind to examine the academic and related factors relevant to the process of school suspension and the first to compare models in Victoria, Australia and Washington State, U.S. In both states, Grade 7 suspension was associated with higher rates of nonviolent antisocial behavior and suspension 24 months later in Grade 9 after controlling for gender and family welfare status. In the full model, only one Grade 7 predictor maintained a direct association with Grade 9 outcomes: Grade 7 suspension predicting Grade 9 suspension. Partially consistent with our hypotheses, relevant factors for the effect of Grade 7 school suspension on Grade 9 nonviolent antisocial behavior included Grade 8 association with antisocial peers and antisocial behavior. The processes were generally similar between the two states, although some important differences were noted. Analyses showed that Grade 7 nonviolent antisocial behavior was more strongly related to Grade 8 low school grades and low school commitment in Victoria compared to Washington State. Furthermore, nonviolent antisocial behavior and interaction with antisocial peers showed different associations with Grade 9 suspension for Victorian and Washington State students, with stronger relationships between Grade 8 interaction with antisocial peers and Grade 9 suspension in Victoria and between Grade 8 nonviolent antisocial behavior and Grade 9 suspension in Washington State.

The pathways identified in this paper are consistent with our hypotheses and with current theories on the developmental influences on antisocial behavior. In accordance with differential association theory, an important factor was association with antisocial peers and antisocial behavior. This result is consistent with the hypothesis that suspension may increase opportunities for students to interact with peers who engage in antisocial behavior, and through this association with antisocial peers, students show increases in antisocial behavior. To ameliorate this risk, both parents and school staff can work together to ensure that suspended students have adult supervision while they are not at school.

Although the measure of low school grades was not associated with Grade 9 nonviolent antisocial behavior, as expected, it was one of the relevant academic factors for Grades 7 and 9 school suspension. This is consistent with previous studies showing that suspension has negative associations with educational outcomes (Arcia, 2006; Mendez, 2003). These results reveal that suspension may adversely impact school progress, and in this way increase the risk of future suspensions. The findings underline the importance of efforts to

facilitate learning for students on suspension by providing schoolwork and assisting students to rejoin the school community when the suspension period has been completed. Additional academic assistance may also need to be provided for these students.

The findings of the current analyses did not support the hypothesis that low school commitment was a relevant academic factor for the school suspension process; although associated with Grade 7 school suspension, low school commitment did not predict Grade 9 antisocial behavior or suspension. Grade 8 favorable attitudes to antisocial behavior was weakly associated with Grade 7 suspension only in Washington State and was related to Grade 9 nonviolent antisocial behavior in both states. It is possible that the effects of suspension on school commitment and student attitudes towards antisocial behavior may be stronger for students who experience multiple suspensions; this is an important question for future research.

International Comparison

In general, the factors relevant to the process of suspension were similar in the two states, although some important differences were noted. Analyses showed that Grade 7 nonviolent antisocial behavior was more strongly related to Grade 8 low school grades, low school commitment, and favorable attitudes to antisocial behavior in Victoria compared to Washington State. Furthermore, Grade 8 interaction with antisocial peers was more strongly related to Grade 9 suspension in Victoria, whereas the magnitude of the association between Grade 8 nonviolent antisocial behavior and Grade 9 suspension was larger in Washington State.

Implications of the Findings

The findings of this study have important implications in both states for the ways in which schools use suspension as part of their behavioral management practices. First, school suspension may contribute to increased problematic behavior through negative effects on academic progress. Schools may be able to ameliorate these effects by giving students on suspension schoolwork to complete, seeking parent assistance in encouraging the completion of the schoolwork, and implementing monitoring of schoolwork completion so that students do not fall behind their classmates. Schools could also reassess whether learning difficulties may have impacted the student behavior that led to the suspension and ensure that students receive assistance when needed. There is a strong research literature linking behavioral and learning problems in children and adolescents (Brooks & Bouras, 1994; Johnson, 2004), underlining the importance of attending to both.

The current study shows that in both states school suspension may create opportunities to associate with other young people who engage in antisocial behavior. It is important if a student is to be suspended that schools, parents, and communities work together to ensure that the student has adult supervision while on suspension. Further, particularly for students in Washington State in this study, suspension may be perceived by students as a reward and encourage attitudes favorable to engaging in antisocial behavior. Ensuring that schoolwork is provided and that the activities of the suspended student are supervised may also reduce the impact of each of these risk factors and later antisocial behavior.

Given the potentially negative impact of school suspension on student outcomes in both states, schools should also consider alternatives to the use of external suspension. These include in-school suspension (e.g., student sits outside the Principal’s office or in the office area with work to complete), time-out in off-site “teaching units” for periods of time, withdrawal of privileges (e.g., school camp, school excursions), writing a contract stating the terms under which the student can remain at school (e.g., attend counseling, anger

management training), and recommending that a student move to another school for a new start to keep the student connected to school. In a further shift towards supportive approaches, restorative practices have been used in Victoria. Restorative practices focus on restoring relationships through acknowledging the losses experienced by victims and holding the offending student accountable for the harm s/he has caused, and may involve exploration of a number of possible options. Consistent with the general debate about the use of school suspension, this move in Victoria to utilize restorative practices has raised concerns from some about "going soft" on students. There is an urgent need to conduct rigorous research on the impact of school-based restorative practices on student behavior, school suspension rates, and other school factors such as school climate. Prevention programs that teach students social, problem-solving, interpersonal, and conflict resolution skills may indirectly reduce the need for suspension through decreasing challenging student behaviors.

Strengths and Limitations of This Study

The longitudinal data collected in this study provide an ideal opportunity to examine both the long-term effects of suspension and the factors relevant to the process of school suspension. The measure of school suspension in this study was not specifically designed for a close examination of the characteristics of school suspension and does not, for example, differentiate between "external" suspensions (student is excluded from attending school) and "internal" (student remains at school). It might be expected that the impact of suspensions varies according to whether they are external or internal (with more negative effects through external suspensions), however the authors are unable to tease out any differential effects of internal versus external suspension. However, subsequent qualitative interviews with a subset of students suspended from school and identified using the student survey item have revealed students did receive an external suspension. Subsequent IYDS surveys of the Victorian Grade 5 student cohort (followed to Grade 11) do differentiate between internal and external suspension and will provide an opportunity to replicate these findings with this cohort.

The current study may be criticized for relying on student self-reported data. However, the use of self-report measures in studies of preadolescents and adolescents is considered a reliable source of data for behavior problems such as antisocial behavior (Huizinga & Elliott, 1986; Jolliffe et al., 2003; Rutter & Giller, 1983), which may not be visible to adults. The generalizability of the results in this study is limited to the states and grade levels examined. A strength of the study is that the sample is representative of the two states (McMorris, Hemphill, Toumbourou, Catalano, & Patton, 2007) and can therefore be applied with confidence to these large population groups.

Given that this is a correlational study, it is not possible to make attributions of causality from these data. The results show associations between suspension and nonviolent antisocial behavior. Stronger evidence on which to base causal attributions could be obtained through an intervention study of the differences in student outcomes for schools using suspension and those not using suspension.

Conclusions

The findings reported in this paper provide the first prospective information on the factors that are relevant to the process of school suspension. The study is also conducted in two different site: Victoria, Australia and the state of Washington in the U.S., and generally finds similar results in the two states, with some important differences illuminated. The results are consistent with previous studies in showing a negative association between school suspension and nonviolent antisocial behavior in both states. The findings further advance

previous research by exploring the factors relevant to the process of suspension. The findings suggest that schools in both states consider the potential impact of school suspension on academic achievement, antisocial behavior, and the provision of opportunities to interact with antisocial peers. Where alternative approaches are unavailable, efforts can be made in both states to use suspension in ways likely to minimize possible negative outcomes.

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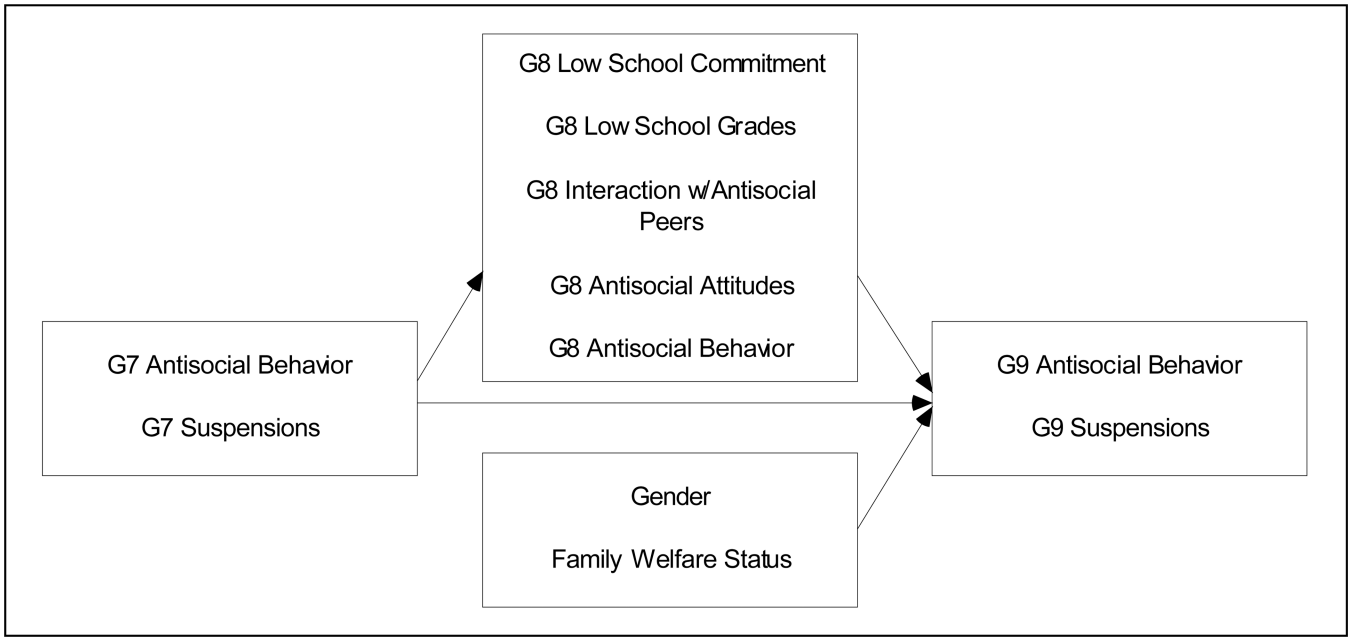

Figure 1.
Diagrammatic representation of the model tested in this paper.
Note: For simplicity, variables within each domain (Grade 7, Grade 8, Grade 9 and covariates) have been presented within the same rectangle but they do represent individual variables that were tested in the path analysis.
G7 = Grade 7, G8 = Grade 8, G9 = Grade 9; Antisocial attitudes = favorable attitudes to antisocial behavior.

Table 1

Descriptive Statistics for Variables Included in the Path Analyses

	Males		Females		Total sample	
Variable	***VIC***	***WA***	***VIC***	***WA***	***VIC***	***WA***
Grade 7	%	%	%	%	%	%
Nonviolent AB	9.9	15.5*	8.8	11.3	9.3	13.4**
Suspension	9.8	18.8***	3.1	6.5*	6.3	12.5***
Grade 8						
Nonviolent AB	12.8	17.7*	13.7	18.1	13.3	17.9**
Grade 9						
Nonviolent AB	18.7	24.2*	20.3	26.3*	19.5	25.3**
Suspension	17.6	16.5	8.1	9.9	12.7	13.1
Grade 8	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
Low school grades	2.1 (0.7)	2.1 (0.7)	2.1 (0.6)	2.0 (0.7)	2.1 (0.7)	2.1 (0.7)
Low school commitment	2.4 (0.7)**	2.3 (0.6)	2.3 (0.6)*	2.2 (0.6)	2.3 (0.6)***	2.2 (0.6)
Association with AB peers	1.3 (0.5)	1.3 (0.5)	1.2 (0.4)	1.3 (0.5)***	1.2 (0.4)	1.3 (0.5)**
Attitudes favorable to AB	1.7 (0.6)***	1.5 (0.5)	1.5 (0.5)**	1.4 (0.5)	1.6 (0.6)***	1.5 (0.5)

VIC = Victoria; WA = Washington State; AB = Antisocial behavior

* $p < .05$;

** $p < .01$;

*** $p < .001$ in tests for state differences

Table 2

Correlations Among Study Variables for Students From Victoria (upper diagonal) and Washington State (lower diagonal)

	1	2	3	4	5	6	7	8	9	10	11
1. G7 suspension		.49***	−.35***	.22**	.36***	.33***	.27***	.31***	.20**	.65***	.33***
2. G7 AB	.53***		−.04	.08	.68***	.39***	.44***	.42***	.42***	.49***	.56***
3. Gender (female)	−.38***	−.12***		.01	.02	−.04	−.09**	−.19***	−.18***	−.28***	.04
4. Welfare	.31***	.17***	.06		.02	−.04	−.09*	−.20***	−.08	.13**	.17***
5. G8 AB	.33***	.71***	.01	.26***		.32***	.44***	.55***	.54***	.35***	.66***
6. G8 low grades	.32***	.28***	−.08	.23***	.31***		.51***	.25***	.25***	.42***	.28***
7. G8 low commitment	.19***	.26***	−.07	.02	.34***	.37***		.40***	.50***	.34***	.30***
8. G8 antisocial peers	.26***	.40***	−.06	.11**	.49***	.25***	.36***		.51***	.41***	.41***
9. G8 AB antisocial attitudes	.23***	.36***	−.10**	.05	.45***	.21***	.44***	.44***		.26***	.38***
10. G9 suspension	.58***	.55***	−.19***	.22***	.54***	.39***	.26***	.34***	.26***		.54***
11. G9 AB	.36***	.64***	.04	.23***	.68***	.28***	.26***	.38***	.36***	.63***	

G7 = Grade 7; AB = Antisocial behavior; G8 = Grade 8; G9 = Grade 9; AB antisocial attitudes = favorable attitudes to antisocial behavior.

* $p < .05$;

** $p < .01$;

*** $p < .001$

Table 3

Standardized Regression Coefficients for Paths of the Multiple-Group Model

Path	Victoria	Washington State
G7 predictor on G9 factors		
G7 suspension → G9 suspension	.28***	.26***
G7 antisocial behavior → G9 suspension	.19***	.25***
Gender → G9 suspension	−.16**	−.09
Welfare → G9 suspension	.09	.09
G7 suspension → G9 antisocial behavior	.11**	.10*
G7 antisocial behavior → G9 antisocial behavior	.28***	.39***
Welfare → G9 antisocial behavior	.12**	.12**
Gender → G9 antisocial behavior	.06	.07

Table 4

Standardized Regression Coefficients for Paths of the Full Path Analysis

Path	Victoria	Washington State
G7 predictors and covariates to G8 factors		
G7 suspension → G8 low school grades	.14***	.15***
G7 antisocial behavior → G8 low school grades	.20***	.14***
Welfare → G8 low school grades	.11**	.14***
G7 suspension → G8 low school commitment	.10**	.09**
G7 antisocial behavior → G8 low school commitment	.24***	.15***
Welfare → G8 low school commitment	.11**	−.00
G7 suspension → G8 interaction with antisocial peers	.12***	.11***
G7 antisocial behavior → G8 interaction with antisocial peers	.29***	.31***
Welfare → G8 interaction with antisocial peers	.15***	.06*
Gender → G8 interaction with antisocial peers	−.10**	−.02
G7 suspension → G8 antisocial behavior attitudes	.03	.08**
G7 antisocial behavior → G8 antisocial behavior attitudes	.27***	.24***
Gender → G8 antisocial behavior attitudes	−.15***	−.05
G7 suspension → G8 antisocial behavior	.05*	.04
G7 antisocial behavior → G8 antisocial behavior	.38***	.42***
Welfare → G8 antisocial behavior	.10**	.10**
G8 predictors to G9 factors		
G8 low school grades → G9 suspension	.26***	.23***
G8 low school commitment → G9 suspension	.02	.04
G8 interaction with antisocial peers → G9 suspension	.29***	.13**
G8 antisocial behavior attitudes → G9 suspension	−.01	−.10
G8 antisocial behavior → G9 suspension	.04	.17***
G8 low school grades → G9 antisocial behavior	.09	.08
G8 low school commitment → G9 antisocial behavior	−.02	.04
G8 interaction with antisocial peers → G9 antisocial behavior	.21***	.11*
G8 antisocial behavior attitudes → G9 antisocial behavior	.22***	.14**
G8 antisocial behavior → G9 antisocial behavior	.18***	.23***
G7 predictors to G9 factors		
G7 suspension → G9 suspension	.22***	.20***
G7 antisocial behavior → G9 suspension	.06	.10*
Gender → G9 suspension	−.13*	−.09
Welfare → G9 suspension	.02	.03
G7 suspension → G9 antisocial behavior	.07	.05

Path	Victoria	Washington State
G7 antisocial behavior → G9 antisocial behavior	.09	.21***
Gender → G9 antisocial behavior	.12*	.08
Welfare → G9 antisocial behavior	.07	.08

G7 = Grade 7; G8 = Grade 8; G9 = Grade 9; Antisocial behavior attitudes = favorable attitudes to antisocial behavior.

+ $p < .10$;

* $p < .05$;

** $p < .01$;

*** $p < .001$

Highlighted rows in the table are those for which tests of the variable paths were statistically different in the two states