Student Threat Assessment as a Method of Reducing Student Suspensions

Dewey Cornell, Ph.D.

Peter Lovegrove, Ph.D.

Curry School of Education

University of Virginia

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Center for Civil Rights Remedies, UCLA

Contact Dr. Cornell at:

dcornell@virginia.edu

434-924-0793
Fax 434-924-1433

P.O. Box 400270
417 Emmet, Bavaro Hall
University of Virginia
Charlottesville, VA 22904-4270

Abstract

This paper presents two studies of the Virginia Student Threat Assessment Guidelines, which is a systematic method for schools to respond to student threats of violence without resorting to zero tolerance suspension. The first study reports secondary analyses from a randomized controlled trial which previously reported that students attending schools using the Virginia Guidelines were less likely to receive a long-term suspension (Odds Ratio = .35) than students attending control group schools using a zero tolerance approach (Cornell, Allen, & Fan, 2012). The secondary analyses found no difference in the impact on White versus Black students, which means that both racial groups benefitted from the intervention. The second study examined the scaled-up implementation of the Virginia Guidelines in Virginia public schools using a retrospective, quasi-experimental design. Schoolwide annual suspension rates were compared in 971 schools that chose to adopt the Virginia Guidelines versus 824 schools not using the Virginia Guidelines. Use of the Virginia Guidelines was associated with a 19% reduction in the number of long-term suspensions and an 8% reduction in the number of fewer short-term suspensions schoolwide during the 2010-2011 school year. Length of implementation was associated with greater reductions in suspensions. Schools with formal training in the Virginia Guidelines had greater reductions than schools that adopted them without formal training. There was not a significant interaction between use of the Virginia Guidelines and minority composition of the school, which means that schools of different racial composition demonstrated similar reductions. In conclusion, the two studies support use of the Virginia Guidelines as a promising approach for reducing suspension rates.

Student Threat Assessment as a Method of Reducing Student Suspensions

Although severe acts of violence in school are relatively rare events, threats of violence are much more common and pose a serious problem for our nation's schools (Borum, Cornell, Modzeleski, & Jimerson, 2010). A national report (Nieman & Devoe, 2009) found that there were 20,260 student threats of physical attack involving a weapon and 461,910 threats of physical attack without a weapon in U.S. public schools during the 2007-2008 school year. These threats occurred in more than two-thirds of the nation's middle and high schools, and more than one-third of the elementary schools. Moreover, approximately 7% of teachers reported being threatened with injury and 4% reported being physically attacked by a student in 2007-2008 (Robers, Zhang, & Truman, 2010). Student threats are much more common than official records indicate. For example, a recent survey of 3,756 high school students found that 12% recalled being threatened at school in the past 30 days, but only 26% of the threats were reported to school authorities (Nekvasil & Cornell, 2012).

When school authorities learn of a threat, they often use a zero tolerance model of discipline that typically involves immediate removal of the offending student from school (APA Zero Tolerance Task Force, 2008). Although suspension is intended as a corrective consequence, suspended students tend to engage in higher rates of subsequent misbehavior and are more likely to be suspended again (Hemphill, Toubmourou, Herrenkohl, McMorris, & Catalano, 2006). School suspensions are consistently associated with negative academic outcomes, including disengagement, truancy, poor academic performance, and ultimately, dropping out of school (Arcia, 2006; Bowditch, 1993; Brooks, Schiraldi, & Ziedenberg, 2000; Civil Rights Project, 2000; Skiba, Peterson & Williams, 1997; Skiba & Sprague, 2008; Suh, Suh, & Houston, 2007; Lee, Cornell, Gregory, & Fan, 2011). Because Black students are more likely to be suspended

than White students (Wallace, Goodkind, Wallace, & Bachman, 2008), they experience disproportionate negative consequences of this counter-productive discipline strategy.

Both the FBI (O'Toole, 2000) and Secret Service (Fein et al., 2002) studies of school shootings recommended that schools use a threat assessment approach. Threat assessment is a violence prevention strategy that begins with the evaluation of persons who threaten to harm others, and is followed by interventions designed to reduce the risk of violence. A key aspect of threat assessment is its emphasis on considering the context and meaning of the student's behavior and taking action that is proportionate to the seriousness of the student's actions.

Consider a simple example: Even an explicitly threatening statement such as "I'm gonna kill you" must be considered in context. A student could make such a statement as a joke, as an expression of frustration with no intent to harm, or as an expression of intent to fight, but not kill, someone. Finally, in the most serious situation, the student might be planning and preparing to carry out a lethal attack. Judgments about the severity of a threat must consider the totality of the circumstances. Although one can imagine ambiguous cases where it is difficult to make a judgment about the seriousness of a threat, our experience is that in the overwhelming majority of cases school authorities can gather enough information to make a reasonable determination. This determination permits school authorities to avoid the one-size-fits-all approach of zero tolerance in which all students are automatically suspended from school regardless of the seriousness of the offense.

The Virginia Student Threat Assessment Guidelines (Cornell & Sheras, 2006) were developed as an alternative to a zero tolerance approach to student threats of violence. In each school, a multidisciplinary team is trained to use a standard procedure and seven-step decision tree to evaluate the seriousness of a student's threatening behavior and take appropriate action.

Threat assessment does not stop with a determination of the seriousness of the behavior, but includes an effort to intervene on the student's behalf to resolve whatever problem, conflict, or stressful situation underlies the student's behavior. Most cases are resolved as transient threats that pose no serious danger to others, while more serious, substantive cases require a progressively more extensive assessment and intervention process.

The threat assessment team typically consists of a school administrator, a school resource officer, and one or more mental health professionals. There is no requirement that the full team be engaged in every case; in practice, many less serious cases can be quickly resolved. Typically, the team leader—usually the school administrator who handles disciplinary matters—calls upon additional team members depending on the seriousness and complexity of the case. In some cases, the school administrator can resolve a transient case working alone, and in other cases the administrator will want to engage a school counselor or other mental health professional to work with a student. In the most serious cases, a law enforcement officer is consulted to consider whether a law enforcement investigation and security measures may be appropriate.

A threat assessment team takes a problem-solving approach to violence prevention that focuses on providing counseling and support services to resolve the conflict or difficulty that stimulated the threat and work out a solution that allows the student to continue in school. The basic idea is that a student makes a threat of violence because he or she is frustrated by a problem, such as a conflict with peers. One goal of the threat assessment process is to help the student deal with the problem so that there is no longer a need to make a threat. This approach to student threats reflects a larger shift in perspective toward student misbehavior and leads to less reliance on punitive sanctions such as school suspension and greater emphasis on teaching students more effective ways to solve problems and choose appropriate behavior (Osher, Bear,

Sprague, & Doyle, 2010). For this reason, threat assessment training might have a more generalized impact on school discipline and the use of suspension. Results from the second study presented in this chapter suggest that such a generalization may have taken place in schools that adopted the Virginia Guidelines.

The Virginia Guidelines have been examined in a series of studies (Allen, Cornell, Lorek, & Sheras, 2008; Cornell, Allen, & Fan, 2012; Cornell, Gregory, & Fan, 2011; Cornell, Sheras, Gregory, & Fan, 2009; Cornell et al., 2004; Strong & Cornell, 2008). These studies have shown that staff training in the Virginia Guidelines has a substantial effect on the attitudes and knowledge of school personnel across disciplines. In each study, school personnel completed surveys before and after participating in a one-day training workshop. These studies have found substantial changes (large effect sizes) in knowledge and attitudes regarding school violence, school discipline, and threat assessment (Allen, et al., 2008). School personnel showed a decrease in fears of school violence and a shift in attitudes consistent with a threat assessment perspective. For example, they were willing to adopt a problem-solving approach to student threats and conflicts and reduced their endorsement of a zero tolerance approach. These changes were observed across groups of school principals, psychologists, counselors, social workers, and school-based police officers. Similar changes in school personnel have been documented in two subsequent studies (Cornell, Allen, & Fan, 2012; Cornell, Gregory, & Fan, 2011).

The first two studies of the Virginia Guidelines were field-tests that demonstrated that school-based teams could carry out threat assessments in a practical, efficient manner without violent outcomes (Cornell et al., 2004; Strong & Cornell, 2008). These studies documented the resolution of approximately 400 student threats at all grade levels. The actions of school personnel were consistent with the changes in knowledge and attitude measured after threat

assessment training. Notably, almost all of the students were permitted to return to school and few of the students received long-term suspensions or expulsions. Students receiving special education services made disproportionately more threats than peers in general education, but did not receive disproportionately higher rates of school suspension (Kaplan & Cornell, 2005). Detailed examination of student gender, race, and disability status was not undertaken in these studies.

The next two investigations were quasi-experimental studies that compared schools using or not using the Virginia Guidelines. The first controlled study was a retrospective comparison of 95 high schools reporting use of the Virginia Guidelines, 131 schools reporting use of locally developed procedures, and 54 schools reporting no use of a threat assessment approach (Cornell et al., 2009). Students at schools using the Virginia Guidelines reported less bullying in the past 30 days, greater willingness to seek help for bullying and threats of violence, and more positive perceptions of school staff members than students in either of the other two groups. In addition, there were one-third fewer long-term suspensions, after controlling for school size, minority composition and socioeconomic status of the student body, neighborhood violent crime, and the extent of security measures in the schools (Cornell et al., 2009). Suspension rates in these schools were not disaggregated by race or gender and so questions of disproportionality could not be examined.

The second controlled study examined changes in suspension rates and bullying infractions one year before and one year after 23 high schools implemented the Virginia Guidelines (Cornell, Gregory, & Fan, 2011). The high schools using the Virginia Guidelines experienced large reductions in long-term suspensions and bullying infractions, but 26 control group schools showed little change. For long-term suspensions, the control group had a baseline

level of 10.9 long-term suspensions per 1,000 students and this level was still 10.9 at the follow-up. In contrast, the rate for schools using the Virginia Guidelines dropped from 8.2 long-term suspensions per 1,000 students (not significantly different from the baseline of 10.9 for control schools) to 3.9 long-term suspensions per 1,000 students, a decline of 52%. For bullying infractions, the control group had a baseline level of 1.2 (infractions per 1,000 students) and 2.0 at follow-up. In contrast, the schools using the Virginia Guidelines had an initially higher level bullying infractions, 5.3, but dropped to 1.1 at follow-up. As in the previous study, disciplinary data disaggregated by race or gender were not available.

The most recent study was a randomized controlled study of threat assessment (Cornell, Allen, & Fan, 2012). In this study, a single school division agreed that 20 of its 40 schools could be randomly assigned to receive threat assessment training and 20 delayed training for one year and served as a control group. During one school year, there were 201 students (100 in intervention schools and 101 in control schools) identified as making threats of violence. In other words, the incidence of student threats that came to the attention of school authorities was nearly the same in both groups of schools. The critical issue was how schools authorities would respond to these threats and the extent to which they would rely on school exclusionary consequences. The Virginia Guidelines were designed to produce three outcomes that were assessed in this study: (1) use of counseling and mental health services to resolve conflicts; (2) involvement of parents in response to the threat; and (3) return of students to school without long-term suspension or alternative school placement. A potential fourth outcome was to examine whether the students carried out their threat of violence. However, as found in our previous studies (Cornell et al., 2004; Strong & Cornell, 2008), few students carried out the threats they made.

Because only seven students were identified as carrying out their threat of violence in the present study, no group comparisons were undertaken.

For each of the hypothesized outcomes, a series of logistic regression analyses compared intervention and control students after controlling for the effects of demographic variables (student gender, school level, and race) and threat severity. Compared with control students, students in schools using the Virginia Guidelines were approximately four times more likely to receive counseling services (Odds Ratio of 3.98). Students in the intervention group were about two-and-a-half times more likely to receive a parent conference (OR = 2.57). Notably, students in the intervention group were about one-third as likely to receive long-term suspension (OR = 0.35) and one-eighth as likely to receive an alternative school placement (OR = 0.13).

The outcome percentages were examined for each group in order to assist in understanding the odd ratios. (These raw percentages do not take into consideration the additional variables controlled in the logistic regressions, so they do not precisely match the odd ratios.) More than half (56%) of students who made threats in intervention schools received counseling services compared to 25% of students in control schools. The rate of parent conferences was 75% in intervention schools versus 55% in control schools. The long-term suspension rate was 25% for students attending intervention schools versus 49% in control schools. Finally, 4% of students in intervention schools received an alternative school placement compared to 20% of students in control schools.

Intervention efforts typically do not have equivalent effects in all schools. Therefore, we examined differences in how well schools adopted the Virginia Guidelines (fidelity of implementation) and whether those differences were associated with student outcomes. Fidelity of staff implementation of the threat assessment guidelines was assessed for the 20 intervention

schools using a compliance scale based on the extent to which team members at each school attended threat assessment meetings, completed documentation forms, and reported that they used the threat assessment model. Higher compliance scores were associated with greater use of counseling services (OR = 1.24) and fewer long-term suspensions (OR = .73). This indicated that schools that more fully implemented the threat assessment model would achieve greater use of counseling services and less use of long-term suspensions.

New research findings. This chapter reports new findings from two studies. The first study is a secondary analysis from the randomized controlled trial describe above. The new analyses examined whether the positive findings from the initial analyses extended across White and Black students.

The second study examined the link between use of the Virginia Guidelines and school suspension rates in a much larger statewide sample of elementary, middle, and high schools. Here the main question is whether the positive effects on long-term suspensions that were observed in controlled studies would be observed in large-scale implementation. Over the past decade, Virginia school divisions have gradually adopted the Virginia Guidelines. As noted above, two of the previous studies found that high schools using the Virginia Guidelines had lower long-term suspension rates than comparison high schools (Cornell, Gregory, & Fan, 2011; Cornell, Sheras, Gregory, & Fan, 2009). These studies also observed better student-teacher relations, less bullying, and a more positive school climate in schools that had adopted the Virginia Guidelines. This suggested the possibility of a generalized effect on school discipline when school authorities moved away from a zero tolerance approach to a threat assessment approach. However, studies have not looked for similar effects in elementary and middle

schools, nor have they examined whether these effects vary across schools with differing racial and socio-economic composition.

The second study examined the scaled-up implementation of the Virginia Guidelines in Virginia public schools using a retrospective, quasi-experimental design. By school year 2010-11, approximately half of Virginia public schools reported use of the Virginia Guidelines. An important question is whether schools who have adopted the Guidelines are seeing reductions in school suspension rates. Unlike the randomized controlled trial, this study did not track the outcomes for individual students, but examined schoolwide suspension rates to determine whether there was a generalized effect at the school level.

Study 1

Method and Results

A secondary analysis was conducted on the 201 students drawn from 40 schools that participated in the randomized controlled trial described above and elsewhere (Cornell, Allen, & Fan, 2012). The school division enrolled approximately 32,000 students in 26 elementary schools, 8 middle schools, and 6 high schools. Approximately 58% of the students were African American, 31% White, 6% Hispanic, and 5% from other racial/ethnic groups. Nearly half (46%) were eligible for free or reduced price meal.

The original study found that students who made threats of violence in schools using the threat assessment model were approximately one-third as likely (OR = .35) to receive long-term suspensions as students who made threats in control schools. Most of the students were boys (73%) and most were from minority groups (73% African-American and 3% Hispanic). The purpose of the secondary analysis was to determine whether the reductions in long-term suspensions and other positive outcomes were comparable across racial groups.

In this study there were 48 White and 146 Black students identified as making threats during the study year. There were too few (6) students in Hispanic or other categories to include in comparisons. The main question was whether Black students were more likely to receive long-term suspensions than White students. These analyses controlled for the same potentially confounding variables as the initial study, because long-term suspensions might be more commonly used in middle and high schools than elementary schools, in cases involving more serious threats, and in response to threats by boys rather than by girls. We tested for the differential effect of race and control/treatment group attendance by including a minority x treatment interaction. No significant interactions (all *p*s > .05) were found for long-term suspension or any of the other outcome variables. (Details of these analyses are available upon request.) In short, this means that the positive findings observed for students who attended schools using the threat assessment model did not significantly differ for White and Black students. Both racial groups experienced comparable benefits.

Study 2

Method

The sample for this study consisted of all 1,795 regular public schools in Virginia, including 1,157 (65%) elementary schools, 327 (18%) middle schools, and 311 (17%) high schools, but excluding other types of schools such as alternative, correctional, and technical schools. The mean enrollments were 516, 762, and 1,217 for elementary, middle and high schools, respectively. The demographic composition of the schools was 52% male, 59% Caucasian, 25% Black or African-American, 9% Hispanic, 5% Asian, 3% unspecified race/ethnicity, and less than 1% Hawaiian/Pacific Islander and Native American.. Approximately 24% of schools reported that their students lived in urban areas. A large

proportion (43%) of students qualified for free or reduced price meals. Additional demographic information is reported in Table 1.

Use of threat assessment. Each year all Virginia public school principals are required by law to complete an online School Safety Audit Survey. In 2011, this survey asked a series of questions about the use of threat assessment procedures. Principals were asked first, "Does your school use a formal threat assessment process to respond to student threats of violence?" and those who answered "yes" were asked a follow-up question, "For your formal threat assessment process, do you follow the guidelines developed by the University of Virginia?" As a result, we compared 971 (54%) schools using the Virginia Guidelines with all other schools, consisting of 381 (21%) not using threat assessment and 443 (25%) using some other approach to threat assessment. (For a comparison of high schools using the Virginia Guidelines with separate groups of high schools not using threat assessment and using some other approach to threat assessment, see Cornell, Sheras, Gregory, and Fan, 2009). In addition, schools were asked when they began using the University of Virginia guidelines, with response options of one (9%), two (15%), three (21%), four, (11%), or five or more (45%) years. Finally, principals were asked whether their school staff had been formally trained in using the University of Virginia guidelines, with 76% answering "yes." The 24% without formal training presumably obtained copies of the threat assessment manual (Cornell & Sheras, 2006) and implemented the model without training. Although the manual is written so that school personnel should be able to understand and implement the model without training, there has been no prior research on differences between schools that adopt the model with or without training. Moreover, the training program has been continuously updated to include new research, including the adverse effects of school suspension and the drop in suspension rates among schools using the threat

assessment model. The manual only covers the initial field-test study of threat assessment and relevant research prior to its publication in 2006.

Suspension measures. All public schools in Virginia are required to report the annual number of short-term (< 10 days) and long-term (> 9 days) suspensions. These data are available to the public on the Virginia Department of Education website (http://www.doe.virginia.gov/statistics_reports/). Suspension rates vary considerably across schools, as reported in Table 1.

The available Virginia suspension data did not disclose the demographic characteristics of suspended students at the school level due to FERPA privacy concerns. This is an unfortunate limitation; however, the demographic composition of each school is available and so it is possible to compare the suspension rates across schools according to the percentage of White students in each school. This kind of analysis is not as informative as examining the demographics of suspended students, but it is useful in discerning whether there are differential effects in schools with high versus low percentages of minority students.

Additional school measures. In examining the relations between use of the Virginia Guidelines and school suspensions, we controlled for some additional school measures. The three school levels were controlled by two dummy-coded variables for middle school and for high school, using elementary school as the reference group. The 2010-11 school enrollment size, the proportion of White students, and the proportion of students eligible for a free- or reduced-price meal were obtained from state records. In order to control for the general level of rule-breaking and disorder in the school, each analysis controlled for the total number of incidents of disciplinary infractions reported for the 2006-07 school year. Virginia schools are required to report total numbers of disciplinary infractions for 37 categories using standard

definitions. There are multiple categories for aggressive behavior against students, teachers and staff, as well as infractions involving alcohol, tobacco, or other drugs, weapons, and misuse of technology. Data for each school are available to the public on the Virginia Department of Education website: http://www.doe.virginia.gov/statistics_reports/school_climate/index.shtml .

Results

We conducted a series of analyses using negative binomial regression in order to investigate the relations between use of the Virginia Guidelines and the use of long- and short-term suspensions. Technical details of the analyses are available from the authors.1[i] These B estimates are reported in the left side column of results in each table. For ease of interpretation, the results reported in the text are given as effect sizes, which are calculated from the exponent of each model estimate (Huang and Cornell, 2012). Effect sizes associated with each variable in the model are provided in the right-most column of each table. The effect size is interpreted as the percentage increase or decrease in the count of suspensions associated with a one unit increase in each predictor.

The first research question was whether use of the Virginia Guidelines was associated with fewer suspensions in schools. Results from Table 2 indicate that schools using the Virginia Guidelines had 19% fewer (B = -.21, one-tailed p = .02) long-term suspensions than schools not using the Virginia Guidelines, after controlling for school demographic measures. Use of the Virginia Guidelines was also associated with 8% fewer (B = -.08, one-tailed p = .04) short-term suspensions. Rates of long-term and short-term suspensions for schools using and not using the Virginia Guidelines are presented in Figure 1.

The second research question was whether use of the Virginia Guidelines for more years was associated with fewer long-term and short-term suspensions. These analyses were limited to

the 971 schools that used the Virginia Guidelines (see Figure 2). The regressions (see Table 3) found that a one-year increase in the number of years a school used the Virginia Guidelines was associated with a 16% reduction in long-term suspensions (B = -.18, one-tailed p = .00) and a 5% reduction in short-term suspensions (B = -.05, one-tailed p = .02).

The third research question concerned whether schools that had formal staff training in the Virginia Guidelines showed greater reductions in suspensions than schools using the Virginia Guidelines without training. Schools were dummy coded to identify those who reported using the Virginia Guidelines without training and those who reported using the Virginia Guidelines with training (both variables used schools not using the Virginia Guidelines as the reference group). Regression analyses with these new categories (see Table 4) found that schools using the Virginia Guidelines without training did not differ from those who were not using the Guidelines, whereas those schools using the Virginia Guidelines experienced 22% fewer long-term suspensions (B = -.25, one-tailed p = .01) and 10% fewer short-term suspensions (B = -.11, one-tailed p = .01) than schools not using the Virginia Guidelines.

The fourth research question concerned whether the lower rates of suspension observed in schools using the Virginia Guidelines varied across schools with different proportions of White versus minority students. We conducted regression analyses that included an interaction between use of the Virginia Guidelines and the proportion of White students in the school. Six separate regression models were constructed, using long- and short-term suspensions as an outcome, and using three different measures of Virginia Guidelines usage: a) used/not used; b) number of years using the Virginia Guidelines; and c) use of the Virginia Guidelines with and without formal training. The interaction terms were not significant in all six of the regression models. In other words, the significantly lower rates of suspension observed in schools using the

Virginia Guidelines did not differ across schools with different proportions of White versus minority students.

Discussion

Use of the Virginia Student Threat Assessments Guidelines was associated with lower levels of school suspension in both studies. The randomized controlled trial in 40 schools produced strong evidence that the Virginia Guidelines can reduce long-term suspensions among students who have made a threat of violence. The second study found correlational evidence of reductions in both long-term and short-term suspensions in a statewide sample of nearly 1,000 schools that have adopted the Virginia Guidelines. Together these findings suggest that school authorities have a viable alternative to zero tolerance suspensions practices for student threats of violence. It is possible for school authorities to take a problem-oriented approach to resolve student threats without resorting to school removal. In this way, schools can avoid the well-known negative consequences that are associated with pushing students out of school and into the prison pipeline (Civil Rights Project, 2000).

The two studies offer complementary support that is important from a larger methodological perspective. The randomized controlled trial provides strong evidence that the Virginia Guidelines produce positive outcomes under well-defined conditions. However, there is widespread concern that many seemingly effective school interventions do not maintain their positive effects when implemented on a larger scale (Tseng, 2012). There are various reasons for this decrement in effectiveness. The greater involvement of researchers in a randomized controlled trial may produce stronger effects and perhaps there is a decline in program fidelity when programs are implemented in the field under less ideal conditions or when there is not close monitoring to assure high quality implementation.

Results from the statewide correlational study suggest that positive effects of the Virginia Guidelines may be retained when implemented on a large scale, but there are some important caveats to consider. The correlational study controlled for several key school demographics, but there may be other uncontrolled factors that produced the positive results, such as other contemporaneous efforts to improve school climate or reduce student misbehavior. Also, school authorities with less favorable views of school suspension might be more likely to adopt the Virginia Guidelines. A key issue for future research is the importance of educating school leaders about the negative consequences of school suspension and convincing them of the viability of alternatives to school removal as a disciplinary consequence.

There were no researchers present to assess the fidelity of program implementation in the correlational study, which would help demonstrate that use of the Virginia Guidelines was more clearly linked to the reductions in suspensions. The finding that only schools with formal training experienced positive effects is suggestive that fidelity of implementation is indeed important. It would be useful to examine whether schools with formal training implemented the Virginia Guidelines with greater fidelity than those without training. Perhaps there are changes in the knowledge and attitudes of school authorities after training that had a salutary effect on their approach to school discipline.

Findings from the second study as well previous studies showing a decline in student suspension (Cornell, Gregory, & Fan, 2011; Cornell, Sheras, Gregory, & Fan, 2009) but the findings were notably larger for long-term suspensions than for short-term suspensions. Short-term suspensions are used frequently in Virginia schools for a wide variety of student misbehavior. Long-term suspensions typically are reserved for more serious offenses such as those involving weapons or threats of violence. Threat assessment training might well generalize to this group of students without as much impact on the full range of students who might receive short-term suspensions of just a day or two. Nevertheless, it would

be desirable to reduce all forms of suspensions and it might require a more concerted effort to convince school authorities to change their disciplinary practices across the board.

It is unlikely that reductions in the suspension of students for threats of violence alone could account for these findings, because there are relatively few such students identified over the course of a year in the average school. Instead, it appears that school authorities have reduced their use of school suspension for a wider range of students. It would be useful to gather more detailed information on suspension rates for specific offenses to determine where the change is taking place. This observation raises the possibility that it may be possible to generate reductions in the use of school suspension on a broader basis through training focused on persuading school authorities to use alternatives to suspension. In other words, if threat assessment training can lead school authorities to make greater use of counseling services and parent consultation for students who make threats of violence, then perhaps this approach can be applied to other forms of student misbehavior.

Training appears to be an especially important factor in producing the positive results observed in these studies. Prior to training, school personnel often support a zero tolerance approach to school discipline and tend to over-estimate the prevalence of homicidal violence in schools. Three studies have shown that training produced changes with statistically large effect sizes in school personnel attitudes and knowledge about school violence (Allen et al., 2008; Cornell, Allen, & Fan, 2012; Cornell, Gregory, & Fan, 2011). Notably, school personnel showed reduced commitment to zero tolerance and consistently positive attitudes toward using the Virginia Guidelines. These changes were observed for school administrators (principals and assistant principals) as well as school-based mental health professionals (school psychologists, counselors, and social workers) and school-based law enforcement and security officers.

Another relevant finding is the correlation between years of program implementation and suspension rates. Schools with more years using the Virginia Guidelines had greater reductions in suspensions. Student incidents requiring a threat assessment are infrequent events, so it seems unlikely that threat cases alone could account for the reductions in suspensions observed in schools using the Virginia Guidelines. It seems more likely that the principles and practices of the Virginia Guidelines are being extended to other forms of student misbehavior. If so, this would be an important generalization of effect to document in future studies.

Racial differences. Many studies have found that minority students, especially African-American students, are suspended at a higher rate than White students (Fabelo, et al., 2011; Wallace, Goodkind, Wallace, & Bachman, 2008). A previous study of short-term suspensions in Virginia high schools during one school year found that 24% of African-American students received a school suspension in comparison to 11% of White students (Gregory, Cornell, & Fan, 2011). Another study found that Virginia high schools with the highest suspension rates had the highest dropout rates, even after controlling for student demographic variables and student attitudes toward following school rules (Lee, Cornell, Gregory, & Fan, 2011). The randomized controlled study found similar reductions in the suspension rates of both African-American and White students, but since the interaction effect was not significant, there is no evidence that use of the Virginia Guidelines reduced the gap between African-American and White student suspension rates.

The correlational study did not have access to data on the race of suspended students, but examined changes in suspension for schools with different percentages of White students. Notably, Virginia schools ranged from 0% to 100% White students. Analysis of interaction effects found that the percentage of White students in the school did not affect the magnitude of

reductions in long-term or short-term suspensions seen among schools using the Virginia Guidelines in comparison to schools not using the Virginia Guidelines. This provides indirect evidence that use of the Virginia Guidelines had comparable effects across White versus minority students. It suggests that the Virginia Guidelines can be used with comparable effects in schools that have high or low percentages of minority students.

Some important next steps for research are to look more closely at the race of students in schools using or not using the Virginia Guidelines, and to determine what kinds of disciplinary infractions, beyond threats of violence, show reductions in suspensions. It would be useful to look more specifically at the decision-making process of school authorities when they decide to charge a student with a disciplinary infraction that could result in a suspension, to determine whether the principles of threat assessment are being generalized to cases that do not involve threats of violence. Another important area for study is the school outcome for students who have made threats of violence. After a threat assessment, are the students less likely to engage in further misbehavior and are they more likely to complete their education than students attending other schools?

In conclusion, the Virginia Guidelines present a promising approach for helping to remedy the high suspension rates imposed on American students, including those from racial/ethnic minority backgrounds. By focusing on the context and meaning of student behavior, school authorities are able to take appropriate actions calibrated to the seriousness of the threat and to direct counseling resources to resolve conflicts (such as bullying and peer conflict) that stimulated the student threat. This method gives schools a sensible and defensible alternative to the automatic suspension practices of a zero tolerance approach. Our findings also

raise the possibility that school authorities can apply the perspective of threat assessment to other forms of student misbehavior and achieve general reductions in school suspensions.

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Table 1

Descriptive Information for 1,795 Schools in Study 2

School Measures	Mean	Min	Max	S.D.
Enrollment	678.59	71	3062	430.85
Number of Long-Term Suspensions	2.04	0	52	5.89
Number of Short-Term Suspensions	82.66	0	1523	155.05
Total Number of Infraction Incidents 2006-07	158.53	0	5017	328.67
Proportion of White students	0.59	0	1	0.28
Proportion of FRPM students	0.43	0	1	0.23
Virginia Guidelines training (Yes/No)	0.54	0	1	0.50
Years of using Virginia Guidelines	1.99	0	5+	2.10

Table 2

Associations Between School Suspensions and Use of the Virginia Student Threat Assessment Guidelines

Variables	B	S.E.	One-Tailed *p* value	Effect size
Long-Term Suspensions				
School Type (Elementary is Reference)				
High	2.644	0.203	0.000	1,407%
Middle	2.671	0.145	0.000	1,445%
Enrollment	0.141	0.017	0.000	115%
Total Infraction Incidents 2006-07	0.055	0.019	0.002	106%
Proportion of White students	-1.083	0.293	0.000	-66%
Proportion of FRPM students	1.557	0.368	0.000	475%
Used Virginia Guidelines	-0.209	0.103	0.022	-19%
Short-Term Suspensions				
School Type (Elementary is Reference)				
High	1.839	0.075	0.000	629%
Middle	1.680	0.061	0.000	537%
Enrollment	0.100	0.009	0.000	111%
Total Number of Infraction Incidents 2006-07	0.064	0.014	0.000	107%
Proportion of White students	-0.704	0.117	0.000	-51%
Proportion of FRPM students	2.502	0.161	0.000	1,221%
Used Virginia Guidelines	-0.081	0.046	0.039	-8%

Note. N = 1,795. This table reports separate analysis for long-term and short-term suspensions using negative binomial regression. B is the change in suspensions associated with an increase in the predictor, using log counts as the unit of the outcome. The effect sizes are interpreted as the percentage increase in suspensions associated with a one unit increase in each predictor.

Table 3

Associations Between School Suspensions and Years of Using the Virginia Student Threat Assessment Guidelines

	B	S.E.	One-Tailed *p* value	Effect size
Long-Term Suspensions				
School Type (Elementary is Reference)				
High	3.050	0.312	0.000	2,122%
Middle	2.975	0.213	0.000	1,959%
Enrollment	0.118	0.024	0.000	113%
Total Number of Infraction Incidents 2006-07	0.037	0.026	0.078	104%
Proportion of White students	-0.955	0.420	0.012	-62%
Proportion of FRPM students	1.955	0.524	0.000	706%
Number of Years Used VATA Guidelines	-0.180	0.048	0.000	-16%
Short-Term Suspensions				
School Type (Elementary is Reference)				
High	1.980	0.118	0.000	724%
Middle	1.774	0.093	0.000	589%
Enrollment	0.083	0.012	0.000	109%
Total Number of Infraction Incidents 2006-07	0.066	0.022	0.002	107%
Proportion of White students	-0.454	0.172	0.004	-36%
Proportion of FRPM students	2.887	0.233	0.000	1,794%
Number of Years Used VATA Guidelines	-0.050	0.024	0.020	-5%

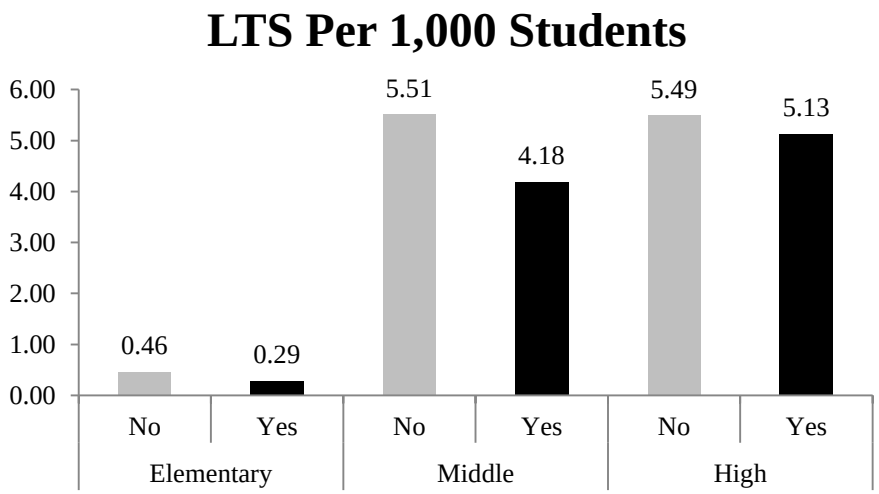
Note. N = 971. This table reports separate analysis for long-term and short-term suspensions using negative binomial regression. B is the change in suspensions associated with an increase in the predictor, using log counts as the unit of the outcome. The effect sizes are the percentage increase in suspensions associated with a one unit increase in each predictor.

Table 4

Associations Between School Suspensions and Training in Use of the Virginia Student Threat Assessment Guidelines

Variables	B	S.E.	One-Tailed *p* value	Effect size
Long-Term Suspensions				
School Type (Elementary is Reference)				
High	2.650	0.204	0.000	1,415%
Middle	2.680	0.144	0.000	1,459%
Enrollment	0.143	0.017	0.000	115%
Total Infraction Incidents 2006-07	0.054	0.019	0.003	106%
Proportion of White students	-1.083	0.296	0.000	-66%
Proportion of FRPM students	1.578	0.372	0.000	485%
Virginia Guidelines Training (No use of Virginia Guidelines as reference)				
No formal training	-0.065	0.171	0.352	-6%
Formal training	-0.252	0.109	0.011	-22%
Short-Term Suspensions				
School Type (Elementary is Reference)				
High	1.842	0.075	0.000	631%
Middle	1.686	0.062	0.000	540%
Enrollment	0.101	0.009	0.000	111%
Total Number of Infraction Incidents 2006-07	0.064	0.013	0.000	107%
Proportion of White students	-0.712	0.117	0.000	-51%
Proportion of FRPM students	2.494	0.161	0.000	1,211%
Virginia Guidelines Training (No use of Virginia Guidelines as reference)				
No formal training	0.004	0.067	0.478	100%
Formal training	-0.110	0.050	0.014	-10%

Note. N = 1,795. This table reports separate analysis for long-term and short-term suspensions using negative binomial regression. B is the change in suspensions associated with an increase in the predictor, using log counts as the unit of the outcome. The effect sizes are the percentage increase in suspensions associated with a one unit increase in each predictor.



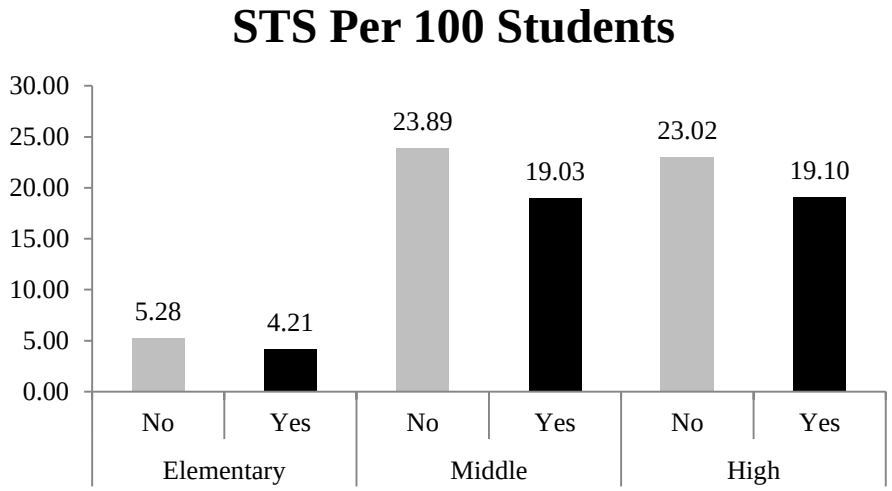


Figure 1

Average long-term and short-term suspension rates per 1,000 students for schools using or not using the Virginia Student Threat Assessment Guidelines (N = 1795)

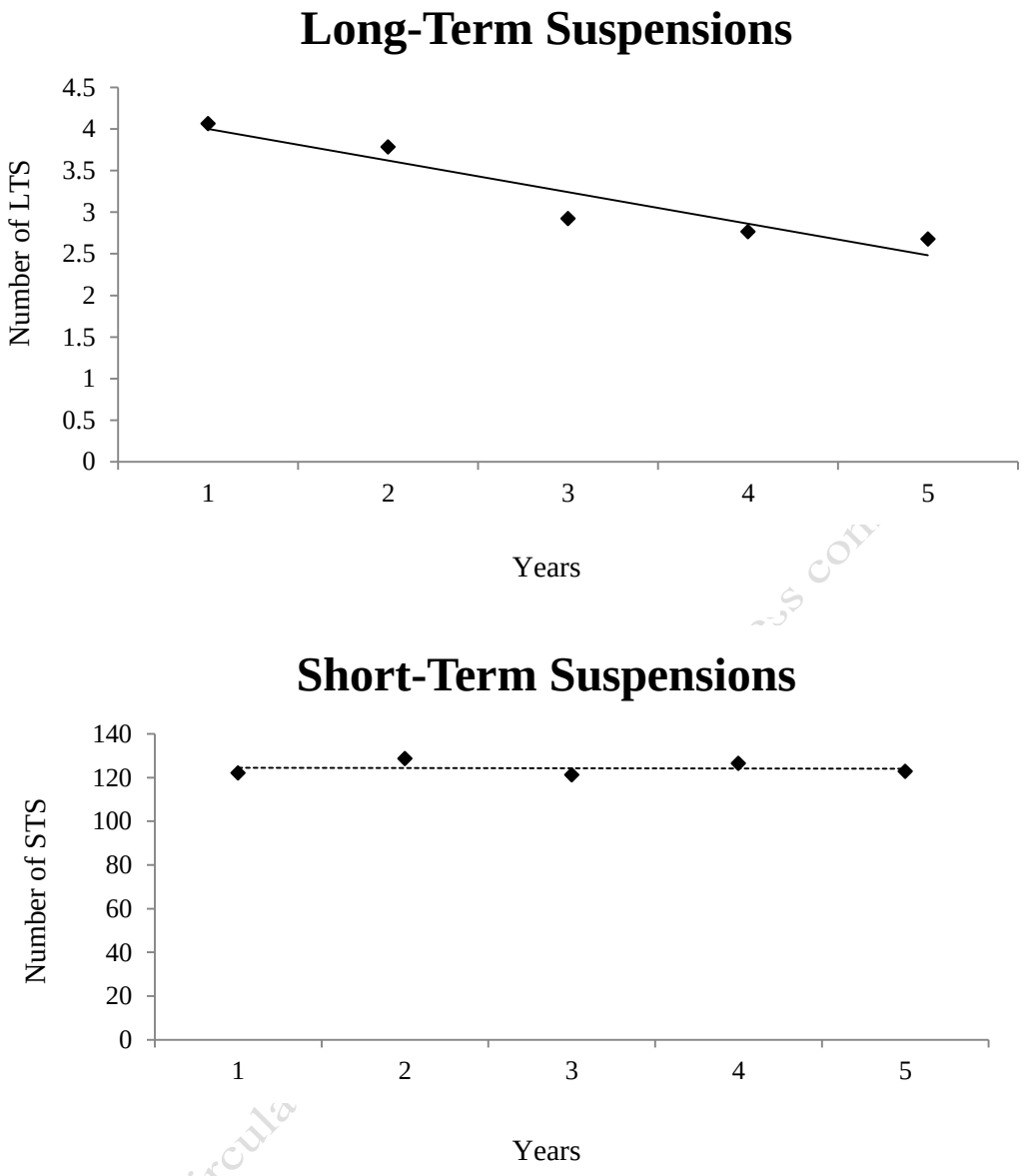


Figure 2. Number of suspensions in a school as the number of years using the Virginia Student Threat Assessment Guidelines increases, adjusted for school type (elementary, middle, and high) and school size (N=971)

Endnotes

[i] Negative binomial regression is a Poisson-based technique is used to analyze count data of infrequent events that have a positive skew and violate the assumptions of Ordinary Least Squares (OLS) regression. This method provides a reduction in residual error that provides better explanatory power (Huang and Cornell, 2012). Negative binomial regressions are used when the variance of a count measure is greater than its mean, which was the case for the outcome measures used here. Dispersion statistics for each analysis were significant, supporting the use of negative binomial regression over Poisson regression.

Data preparation and descriptive analyses were performed using SPSS (Version 20; IBM Corporation, 2011). The negative binomial regression analyses were performed using MPlus (Version 6.1; Muthén and Muthén, 1998-2010). All respondents with non-missing data for more than one variable were included in the analysis, using maximum likelihood estimation (N = 1795). When calculated by the statistical software, the model effect estimates are the log odds of a one count increase in the outcome associated with a one unit increase in each independent variable.