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Abstract

The research described in this report was an experimental investigation of the effectiveness of SRO-embedded multi-disciplinary teams in reducing risk behaviors in students, specifically the average number of disciplinary incidence over the course of three years. Results indicate that while schools with a state-trained SRO did have a lower rate of increase in disciplinary incidents compared to a school with no SRO, the SRO working with schools in a multi-disciplinary team showed a significant decrease in the average number of incidents over time.

Summary Overview

Study Purpose

The responsibility for the safety of school children falls into the hands of many adults across multiple contexts. Parents maintain this responsibility at home, teachers instruct and support children at school, and law enforcement oversees community laws and norms. When a law enforcement officer is assigned to public schools through a School Resource Officer (SRO) program, two organizations designated to fulfill school safety mandates (i.e., public schools, law enforcement) are being asked to merge their respective organizational structures to strengthen safety in school communities. The challenge for both groups becomes how to integrate law enforcement into the school community such that law enforcement officers contribute their expertise in dealing with issues of school safety while honoring the values and norms of the larger school context. Decades of organizational research support the proposition that alignment and cohesion within an organization are critical to organizational change. Penuel and colleagues (2010) assert, “When the formal organization of a school and patterns of informal interaction are aligned, faculty and leaders are better able to coordinate ...change” (p. 57). The following study describes a process for integrating school safety officers into middle school and high school settings such that the officers are an integral part of the planning and implementation of school safety plans and establish strong lines of communication and relationships with educators.

Of the initial research questions proposed in the grant application, this report will focus on responding to the following research questions:

1. Do schools with SROs demonstrate significantly greater declines in student disciplinary incidences than schools with no SROs?
2. Do schools with SROs who receive the enhanced training (intervention) show greater declines in student disciplinary incidences than schools whose SROs receive only the standard training?
3. Do the answers to questions 1-2 vary by sub-populations in the schools such as students from racial/ethnic minority backgrounds, gender, and socioeconomic status?

Project Design

Description of Training – Condition 1 and Condition 2

Condition 1 standard training. Condition 1 schools received the standard training provided by the state department of education to SROs. The goals of the School Safety Program (SSP) include the following: a) SSP contributes to an orderly, purposeful atmosphere, which promotes the feeling of safety conducive to teaching and learning, and b) to teach Law-Related Education (LRE) that promotes a safe, orderly environment, and good citizenship. These goals guide the prevention focus of the program, which is embedded throughout the four-day Training for New Officers (TNO) that all School Safety Program-funded officers are required to attend so they can successfully integrate into the school community and implement the program. The first day of training is also attended by each school's principal, and sergeant from each law enforcement agency represented, ensuring that all partners are familiar and supportive of each other's roles and responsibilities, and preparing them to collaboratively implement the program. The TNO covers all program requirements including the officer teaching at least 180 hours of Law-Related Education and having a multi-disciplinary School Safety Assessment and Prevention Team that meets regularly to review data as they design, implement, and assess the program. In days two through four of the TNO, officers receive training in understanding adolescent development, working with students with special needs, understanding school culture, and best practices in teaching LRE, including learning and practicing the use of interactive teaching techniques. Upon receiving this thorough training the first year, officers attend advanced one-day LRE Academies in subsequent years reinforcing best practices in teaching LRE in various topics pertinent to their campus such as gang, drug, and bullying prevention

Condition 2 intervention condition. In the second condition, the intervention was designed to integrate the SRO into a group of educators who hold traditional schools roles and who are charged with maintaining school order and safety and creating a positive school climate. This includes school administration and school mental health staff (i.e. school psychologists, counselors, social workers) who often are charged with ensuring optimal student behavioral and academic functioning. As a member of this team, the SRO's position exists within the fabric of the daily activities of the school and draws upon the SRO's expertise in law-related education, investigation, and neighborhood relationships to increase the effectiveness of the traditional team in maintaining safety and promoting a positive culture of supportive student learning.

Intervention training. In summer 2015, intensive training was provided to the SROs and the mental health teams at the intervention schools. The SROs in this condition received the standard ADE training plus counseling skills training.

During the first school semester of Year 1, Workshop 2 of the PREPaRE training was presented, and a coach was assigned to help the team implement essential elements of the curriculum per their action plan. In the spring semester of Year 1, coaches continued to work with each of the teams. There was a retreat of teams in February of Year 1 so that they might share with each other lessons learned from implementing school safety and mental health initiatives.

In the summer of Year 2, a two day retreat/conference was scheduled for all teams. The topics included training on issues such as threat assessment, suicide prevention and intervention, dating violence, and bullying. At the end of those workshops, teams developed action plans on one of the training topics based on data from their school. In fall and spring of Year 2, coaches continued working with the teams to help them implement desired changes. A retreat was held in February of Year 2 in order for the teams to share lessons learned and to plan for sustainability. Additional support for implementing the PREPaRE and other curricula were provided by webinars and on an active website with links to local and national resources.

Condition 3 control schools. Schools assigned to condition 3 did not have an SRO assigned to their school nor did their school teams receive any of the aforementioned training.

Project Method

Subjects

Beginning in January of 2018, the Arizona Department of Education contacted all schools that participated in the original study to determine their level of interest in continued participation. Of the original participating schools (45 total, 15 in each condition), approximately 30 schools agreed to allow the researchers to collect student-level data retroactively (across the 3 years of the original study) and some follow up-up survey data from teachers and school resource officers. Of those 30 schools who initially agreed, 10 have submitted useable data thus far that could be submitted and analyzed for this report under the following conditions:

- a. Control Group (no SRO): 1 schools ($n = 2,256$)
- b. Condition 1 (SRO only): 5 schools ($n = 13,396$)
- c. Condition 2 (SRO +): 4 schools ($n = 13,546$)

See data files for demographic breakdowns of students at each school. Aggregated survey data from approximately 20 teachers at each school collected at Time 1 were also used for the current analysis, using subscales designed to measure perceptions of school disciplinary structure from the Authoritative School Climate Survey (Cornell, 2015). Data not included in the draft summary overview are as follows: teacher data (surveys) from Times 2, 3, and 4 (2019); mental health and administrative personnel data (surveys and interviews) from Times 1, 2, and 3; student data (survey) from Time 1; SRO interviews and weekly logs from Times 1, 2, 3, and 4 (2019). Additionally, between 7 and 9 more schools have submitted student data that are still being evaluated for usability. Data files provided in the final report will be more comprehensive as well. For example, because schools were inconsistent in the way they reported student attendance data, we are still processing the usefulness of attendance as a valid dependent variable for comparison between schools.

Analysis

Missing Data: Data collected by each school only reports the number of disciplinary incidents for students who are in attendance; therefore, there are missing data points for students who may not have attended the target school for all three years. Multiple imputation is a general approach to the problem of missing data that is available in several commonly used statistical packages (Sterne, Carlin, Royston, & Carpenter, 2009). It aims to allow for the uncertainty about the missing data by creating several different plausible imputed data sets and appropriately combining results obtained from each of them.

Using SPSS version 25, we were able to create 5 multiple copies of the dataset, with the missing values replaced by imputed values. These are sampled from their predictive distribution based on the observed data—thus multiple imputation is based on a Bayesian approach. The imputation procedure must fully account for all uncertainty in predicting the missing values by injecting appropriate variability into the multiple imputed values; we can never know the true values of the missing data.

The second stage was to apply hierarchical linear modeling to fit the model of interest to each of the imputed datasets. Estimated associations in each of the imputed datasets will differ because of the variation introduced in the imputation of the missing values, and they are only useful when averaged together to give overall estimated associations. Standard errors are calculated using Rubin's rules (1987) which take account of the variability in results between the imputed datasets, reflecting the uncertainty associated with the missing values. Valid inferences are obtained because we are averaging over the distribution of the missing data given the observed data.

Hierarchical Linear Modeling: The best way to investigate teacher- and student-level effects is to use different levels of analysis, or hierarchical linear modeling (HLM; Raudenbush & Bryk, 2002). This method also prevents a violation of the assumption of independence, given that students in the same class are not really independent of school effects, which would otherwise deflate standard errors and Type I errors. Principles of HLM modeling were applied for total number of disciplinary incidents for each student over the course of three school years (2015, 2016, and 2017). Incidents over three years was modeled at three different levels: time (Level 1), student (Level 2) and teacher beliefs at each school (Level 3).

Therefore, the intercept at Level 1 represents the overall average of incidents at Time 1, and the slope at Level 1 represents overall change in the incidents over time.

In particular, we were interested in modeling the effects of teachers' beliefs about school safety, specifically their perceptions of the school's sense of fairness (γ_{001j}) and justice (γ_{002j}) in 2015 on students' change in incidents over time in all three conditions; no SRO, SRO, and SRO+. We ran a model using up to five student level predictors: gender (β_{01j}), grade in school (β_{02j}), ethnicity (β_{03j}), and free/reduced lunch status (β_{0j}) and condition (β_{11j}). Slopes for continuous variables at Level 3 were modeled as grand-mean centered, meaning that each individual's score was adjusted by subtracting it from the grand mean ($X_i - X_{ij}$). Software entitled Hierarchical Linear Modeling (Raudenbush, Bryk, Cheong, & Congdon, 2001) was used to analyze the aforementioned model.

Results

We first evaluated the partitioning of variance through an investigation of unconditional models. Then, we analyzed the effects of individual-and school-level variables on number of disciplinary incidents. A three level unconditional model of individual change was established that nested time (Level 1) within students (Level 2) within schools (Level 3). The following represents the dependent variable Y at time t of student i in school j :

$$Y_{ijk} = \pi_{0ij} + \pi_{1ij}(\text{TIME})_{ij} + e_{ij}$$

Y_{ij} is the outcome at time t for child i in school j ; $(\text{TIME})_{ij}$ is 0 in 2014, 1 in 2015, and 2 in 2016; π_{0jk} is the initial status of child ij , that is, the expected outcome for that child at Time 0; and π_{1jk} is the rate of change for child ij during the study. Only the intercepts were allowed to vary at random, giving us the following equations at Level 2,

$$\pi_{0ij} = \beta_{00j} + r_{0ij}; \pi_{1ij} = \beta_{10j};$$

and the following equations at Level 3,

$$\beta_{00j} = \gamma_{000} + u_{00j}; \beta_{10j} = \gamma_{100}.$$

Note that β_{00j} represents the mean initial status within each school j , while γ_{000} is the overall mean initial status; β_{10j} is the mean change rate within school j , while γ_{100} is the overall mean change rate.

Intraclass correlation coefficients (ICC) were calculated using the following components of total variability, Y_{ijk} : (Level 1) among time within students, σ^2 ; Level 2) among students within teachers, τ_π ; and (Level 3) among teachers, τ_β (Raudenbush & Bryk, 2002). This allowed us to estimate the proportion of variation that is within students, among students within schools, and among schools. That is,

$\sigma^2 / (\sigma^2 + \tau_\pi + \tau_\beta)$ is the proportion of variance within students;

$\tau_\pi / (\sigma^2 + \tau_\pi + \tau_\beta)$ is the proportion of variance among students within schools; and.

$\tau_\beta / (\sigma^2 + \tau_\pi + \tau_\beta)$ is the proportion of variance among schools.

The total variance (the denominator of the preceding equations) and each of these estimates of variance were calculated and are as follows: ICC within students = 39%; ICC among students within schools = 38%; ICC among schools = 22%.

The Level 2 conditional models are represented as,

$$\pi_{0ij} = \beta_{00j} + \beta_{01j}(\text{GENDER}) + \beta_{02j}(\text{GRADE}) + \beta_{03j}(\text{ETHNICITY}) + \beta_{04j}(\text{FREE/REDUCED LUNCH}) + r_{0ij};$$

$$\pi_{1ij} = \beta_{10j} + \beta_{11j}(\text{CONDITION});$$

such that GENDER is coded 0 for girls and 1 for boys, GRADE is coded 0-7 for grades 6-12, ETHNICITY is coded 0 for White and Asian Students, and 1 for underrepresented minority students (Hispanic, Black, Native American, and Multiracial), FREE/REDUCED LUNCH is coded 0 for does not receive and 1 for does receive. CONDITION is coded 0 for no SRO, 1 for SRO only, and 2 for SRO + mental health professional.

The Level 3 conditional models are represented as,

$$\beta_{00j} = \gamma_{000} + U_{00j}; \beta_{10j} = \gamma_{101} + \gamma_{101}(\text{FAIR}) + \gamma_{102}(\text{JUST}),$$

such that FAIR was a teachers' perception of their school's disciplinary structure fairness, and JUST was a teachers' perception of their school's disciplinary structure justice.

Table 1. Hierarchical Linear Model for Students' Number of Disciplinary Incidents Over Time

Fixed Effects:	Number of Disciplinary Incidents		
	Coefficient	se	t-ratio
Model for initial status, π_{0ij}			
Level 2:			
Gender, β_{01j}	0.15	0.03	5.35***
Grade, β_{02j}	0.02	0.18	.97
Ethnicity, β_{03j}	0.12	0.02	7.11***
Free/Reduced Lunch, β_{04j}	0.13	0.03	4.69***
Model for growth rate, π_{1ij}			
Level 2:			
Condition, β_{11j}	-0.12	0.03	-3.55*
Level 3:			
Intercept, γ_{100}	0.21	0.07	2.86*
Fairness, γ_{101}	0.31	0.10	3.20**
Justice, γ_{102}	0.06	0.13	.48
	Variance	df	χ^2
School mean status, u_{00j}	0.25	8	6421.80***
Initial status, r_{0ij}	0.59	26969	102972.52***
Level-1 error, e_{ij}	0.61		

Note: * $p < .05$; ** $p < .001$; *** $p < .001$

As seen in Table 1, results of the analysis indicate that at Time 1, disciplinary incidents were higher for boys compared to girls (Figure 1), underrepresented minority students compared to White and Asian students (Figure 2), and students who receive free/reduced lunch compared to those who do not qualify (Figure 3). There was no significant difference for incidence across grade levels. **Most importantly, the condition coefficient was significant and negative for the model slope, indicating that the SRO and SRO+ conditions were effective at reducing the overall number of student incidences over time.** At

Level 3, teachers' perception of school structure fairness was a significant positive predictor of disciplinary incidents over time (Figure 4). Thus, teachers who reported fair practices of discipline at the beginning of the year tended to have students with higher rates of incidents at their schools.

Implications for Criminal Justice Policy and Practice in the United States

Educators face many challenges in educating students in an increasingly complex and global environment. As a result, many individuals within the school and community at-large are needed to move learning forward. This distributive leadership calls on school administration to appropriately expand the decision making across various group of people to strengthen the capacity for efficient and effective management of the educational processes (Spillane, Healey, & Melsers Parise, 2009). Such teams become opportunities to share information and resources from different perspectives that lead to levers for change (Liou, Daly, Brown & Fresno, 2015). In high performing teams, diversity of ideas and disciplinary skills contribute to a team unified in pursuit of goals. This cohesion among team members increases cohesion across campus. A strong school leadership team provides the opportunity for the various members with different roles to provide their perspectives on individual students and the larger picture of student behavior issues within all areas of the school (e.g., bus stops, athletic activities, on school property). This team approach provides an opportunity to plan for changes within the context of a broader mission of the school.

Results indicate that having a well-trained SRO is effective at **reducing the average rate** of increase in disciplinary incidents over three years relative to schools that have no SRO, but only schools that had an SRO collaborate with a mental health team were effective at **reducing the average number of incidents to a lower than baseline rate (Time 1)**. It is therefore imperative that State Departments of Education and Federal Education Agencies invest in SRO team training models to determine if results are replicable in schools with variant populations and discipline policies.

Figure 1. Girls (0) have fewer average disciplinary incidents than boys (1); the SRO+ condition (green) decreased the average number of incidents over time for both girls and boys

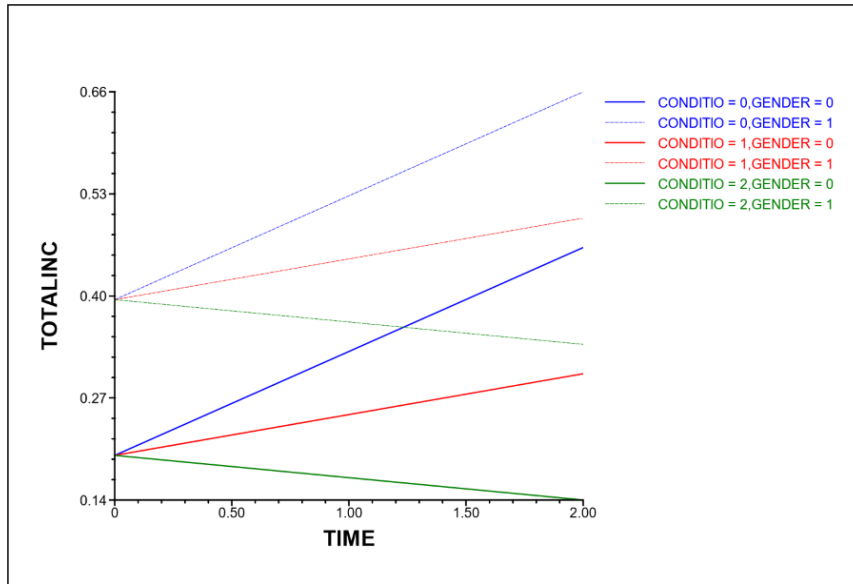


Figure 2. White and Asian students (0) have fewer average disciplinary incidents than underrepresented minority students (1); the SRO+ condition (green) decreased the average number of incidents over time for both groups.

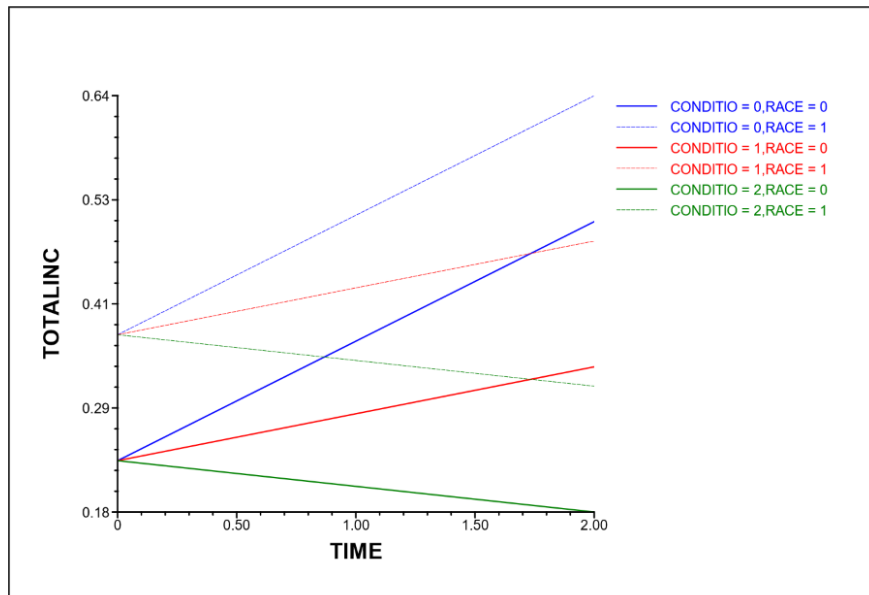


Figure 3. Students who do not qualify for free and reduced lunch (0) have fewer average disciplinary incidents than students who do qualify (1); the SRO+ condition (green) decreased the average number of incidents over time for both groups.

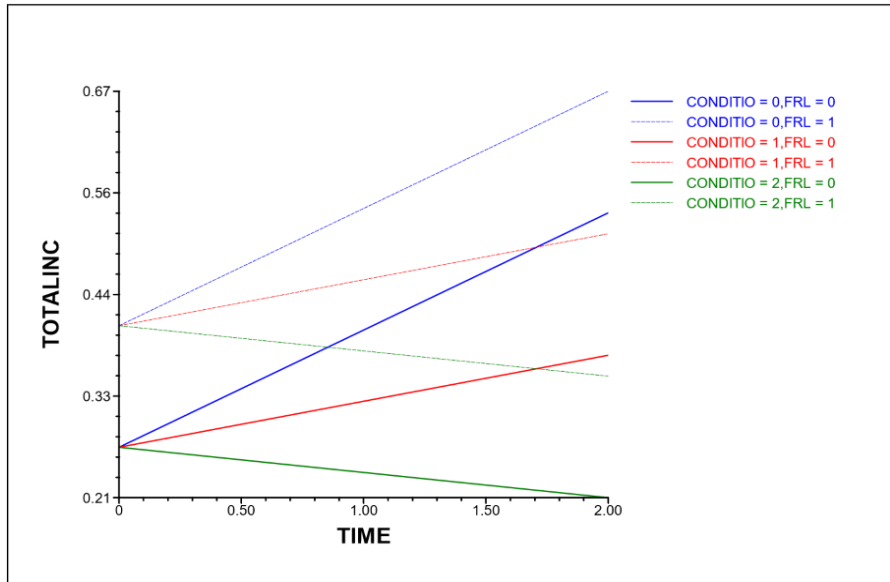


Figure 4. Thus, teachers who reported fair practices of discipline at the beginning of the year tended to have students with higher rates of incidents at their schools.

