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# **A Randomized Impact Evaluation of *Capturing Kids' Hearts***

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## OVERVIEW

Funded by the National Institute of Justice and in collaboration with the Flippen Group, the South Carolina Department of Education, and the districts of Charleston, Georgetown, Greenville, and Richland County Schools, WestEd conducted a randomized controlled trial of a violence prevention and school climate improvement program known as Capturing Kids' Hearts Campus by Design (CKH). CKH is a skill intensive, systematic process designed to strengthen students' connectedness to school through enhancing protective factors (strong bonds with teachers, clear rules of conduct that are consistently enforced) and targeting modifiable risk factors (inappropriate behavior, poor social coping skills). Components of CKH have been widely used throughout the United States. As of 2013, CKH training has been offered to over 200,000 staff in more than 7,000 schools. Although widely used, the whole package of CKH training and service has not been sufficiently subjected to a rigorous evaluation to assess the effectiveness of the program.

## STUDY PURPOSE

For the most part, schools are safe places for students; but when violence does occur in schools, it affects a particularly vulnerable population of children and adolescents and strikes a blow within our communities. Data suggest that significant levels of violence, bullying, and other problems in schools create conditions that negatively impact learning. Disruptive aggressive behaviors such as bullying and violence create a hostile school environment that may interfere with the academic performance and mental health of students who are victims or witnesses. Students who are exposed to high levels of aggressive behavior and violence at school are more likely to disengage from school and to experience clinical levels of mental and emotional disorders than are students who experience either no or low levels of violence at schools. Students who are bullied are also more likely to become truant from school and have lower academic performance. Research indicates that the majority of school shooters had been previously bullied. Disruptive and aggressive behaviors in the classroom, and the resulting suspensions and expulsions, also diminish teachers and students' instructional and learning time.

Yet despite the attention on disruptive and aggressive behaviors in the classroom, many teachers and other school staff believe they are ill prepared to cope with it. In fact, when compared to student reports, teachers tend to underestimate the prevalence of violence and bullying at their schools and the severity of incidents (for review, see Holt & Keyes, 2004). Thus, schools are in need of more tools to use in responding to violence and aggression on campus. CKH has become a popularly adopted strategy in light of these concerns.

The purpose of this study is to conduct an evaluation that will add to the literature on promising programs that improve school safety and climate, reduce bullying, and improve student social competencies. This randomized controlled trial provides the first rigorous test of the Capturing Kids' Hearts package of programs to determine if its promise holds up in a rigorous evaluation. The study is designed to address the following research question: What are the impacts of CKH on violence perpetration and victimization, relationship bonds between and among students and teachers, and social competencies?

Specifically, the findings presented address the following questions:

1. Does Capturing Kids' Hearts enhance relationship bonds between and among students and teachers, increase students' social competencies, and reduce aggression and violence?
2. Does Capturing Kids' Hearts reduce absenteeism, truancy, suspensions, and disciplinary referrals, and increase language arts and math test scores?

Research question 1 is examined using data collected from surveys administered to students and teachers, while research question 2 relies on student survey and archival data.

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## THE CAPTURING KIDS HEARTS (CKH) INTERVENTION

The CKH program was first developed in 1989 by the Flippen Group and has impacted approximately 15 million students over the past two and a half decades. It is a widely used program. The Flippen Group has provided CKH training to over 200,000 administrative and instructional staff in more than 7,000 school settings. The Capturing Kids' Hearts Teen Leadership curriculum has been taught to approximately 530,000 students in 26,500 classrooms in 36 States and, internationally, in Australia.

Schools assigned to the treatment condition receive all of the programs and processes in the school-wide model, *CKH Campus by Design*, including *Capturing Kids' Hearts*, *Process Champions-Plus*, *Campus TrAction Pacs*, *Teen Leadership*, *CKH Recharged*, and *Leadership Blueprint*. These trainings address the mechanisms and processes of social skills instruction that lead to improved student behavior by promoting skills acquisition (i.e., modeling, coaching, and behavioral rehearsal), enhancing skills performance, removing competing behavior, and facilitating maintenance of social skills (Lane, Gresham, & O'Shaughnessy, 2002).

*Capturing Kids' Hearts* is a 3-day teacher and administrator training program that provides school faculty with the skills they need to model and teach relational skills, communicative competencies, problem-solving skills, citizenship, and consequential thinking. This program provides the foundation on which teachers build effective classroom management strategies including engaging students at the beginning of class, developing classroom expectations for behavior, providing effective feedback, and identifying and addressing conflict.

*Process Champions* is a 2-day teacher and administrator training program that reinforces the Capturing Kids' Hearts training and develops teachers and administrators who act as on-site process mentors, helping their colleagues apply and master all aspects of the training. Process Champions mentors receive special additional instruction that prepares them to assist and support their peers in implementing the process with fidelity.

*Campus TrAction Pacs* consists of two, 2-day sessions that provide the opportunity for campus administrators and Process Champions (teacher mentors) to work one-on-one with a Project Consultant from the Flippen Group who helps improve implementation of the process. One session is offered in each school term (fall and spring) and includes phone consulting consisting

of six, 1-hour phone calls that provide support for campus administrators and Process Champions as they implement the Campus by Design process. During the consultations, the Project Consultant may assist with setting implementation expectations, dealing with conflict, establishing an effective communication system, or addressing other issues that require attention. The consultation phone calls are conducted on a monthly basis during the school year.

*Teen Leadership* is a 2-day leadership training for teachers completing CKH and Process Champions trainings and resulting in a certificate. Teachers are trained to implement a semester course for students on leadership skills. Student manuals are provided for each student.

*Capturing Kids' Hearts Recharged* is offered in year two and continues the transformational, multi-year process for teachers and administrators.

*Leadership Blueprint* is designed for upper level campus and district administrators. It is a 2-day training designed for leaders to learn and practice the skills they will use and model on a daily basis.

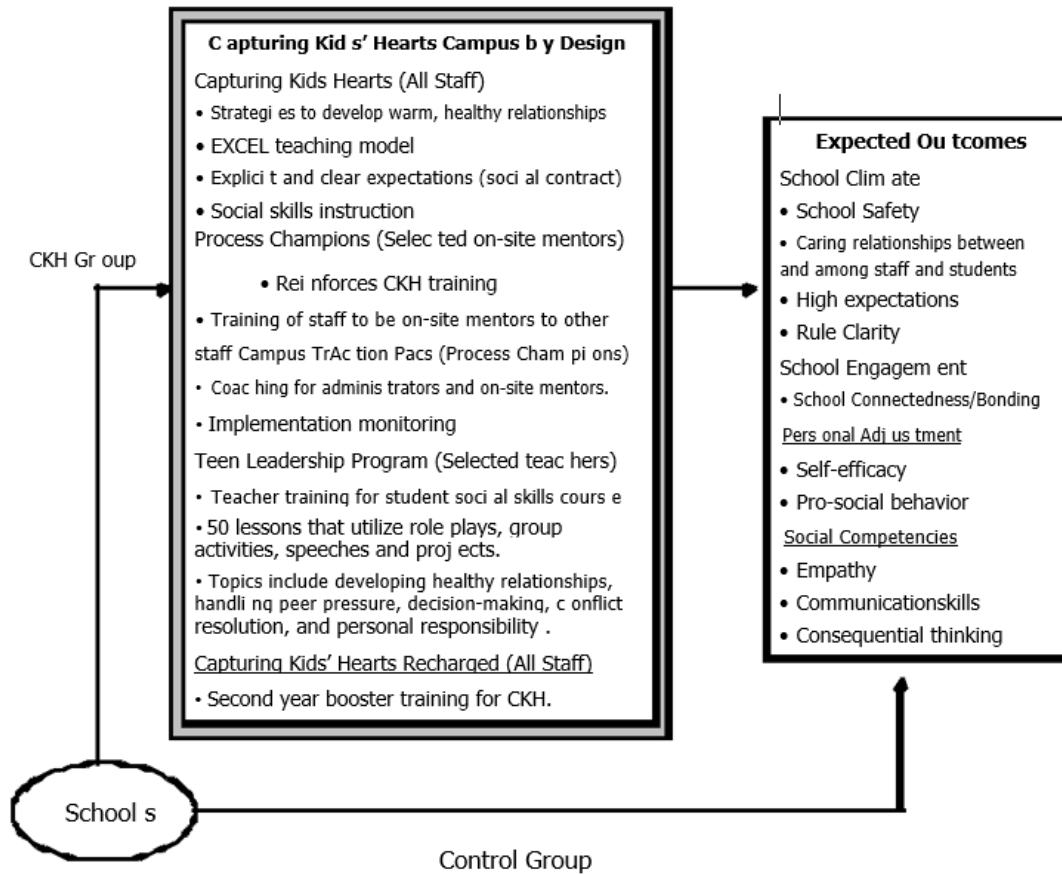
### **Conceptual Underpinnings**

The Capturing Kids' Hearts Program is based on a multifactor causal model of youth risk behaviors that is closely aligned with Social Learning Theory (Bandura, 1986, Holtzapple et al., 2011). The model posits that for students to achieve both socially and academically, instructional leaders must communicate clear expectations and carry them out in a climate of trust (Supovitz, & Weathers, 2004, Kerr et al., 2006). The model holds that students perform and behave better for teachers they like and with whom they feel safe. CKH is designed to facilitate relational trust while building high performing teams across the school. Training is provided to all staff on campus who interact with students, i.e., administrators, teachers, professional support, food service workers, custodians and transportation personnel. CKH aims to strengthen faculty relationships and foster students' connectedness to teachers through enhancing protective factors (strong bonds with school professionals, clear rules of conduct that are consistently enforced) and targeting modifiable risk factors (inappropriate behavior, poor social coping skills). This includes intentionally growing leadership skills in students via appropriate modeling by teachers, administrators and community members.

The CKH foundational program provides explicit instruction to all school staff on strategies to develop positive relationships between and among students and staff, a delineated process to foster healthy relationships between staff and students and teach social skills during each class period (EXCEL teaching model), and a simple strategy that provides clarity on appropriate and inappropriate classroom behavior (social contract). CKH also provides staff with specific strategies, in the form of scripted questions that help students understand and take responsibility for misbehavior.

The theory of action underlying CKH that guided this study is depicted in Figure 1.

Figure 1. Capturing Kids’ Hearts Theory of Action



**RESEARCH DESIGN AND METHODS**

To examine the impact of CKH, this study used a true, cluster-randomized, experimental design with repeated measures (Boruch, et al. 2004; Cook & Campbell, 1979; Murray, 1998) involving 27 middle schools served by four school districts in South Carolina—Charleston County, Georgetown County, Greenville County, and Richland County. Schools were randomly assigned to one of two different groups—a treatment group and a wait-listed control group—with 15 schools in the treatment group, 12 schools in the control group, and approximately 607 students per school in grades 6-8 (27 schools, and 16,385 students). The student population is largely minority, with 45% White, 43% African American, and 8% Latino. Approximately 57% of students were eligible for free/reduced-price meals.

The treatment group received the CKH package, with training provided to all teachers and administrators—including the foundational CKH, Process Champions-Plus, Campus TrAction Pacs, CKH Recharged, and the Leadership Blueprint—and implemented the intervention over a two-year period. Selected teachers in treatment schools were trained to implement the one-semester Teen Leadership course for grade 6 students. Schools in the control condition operated as “business as usual” during this time and were offered training following the two-year



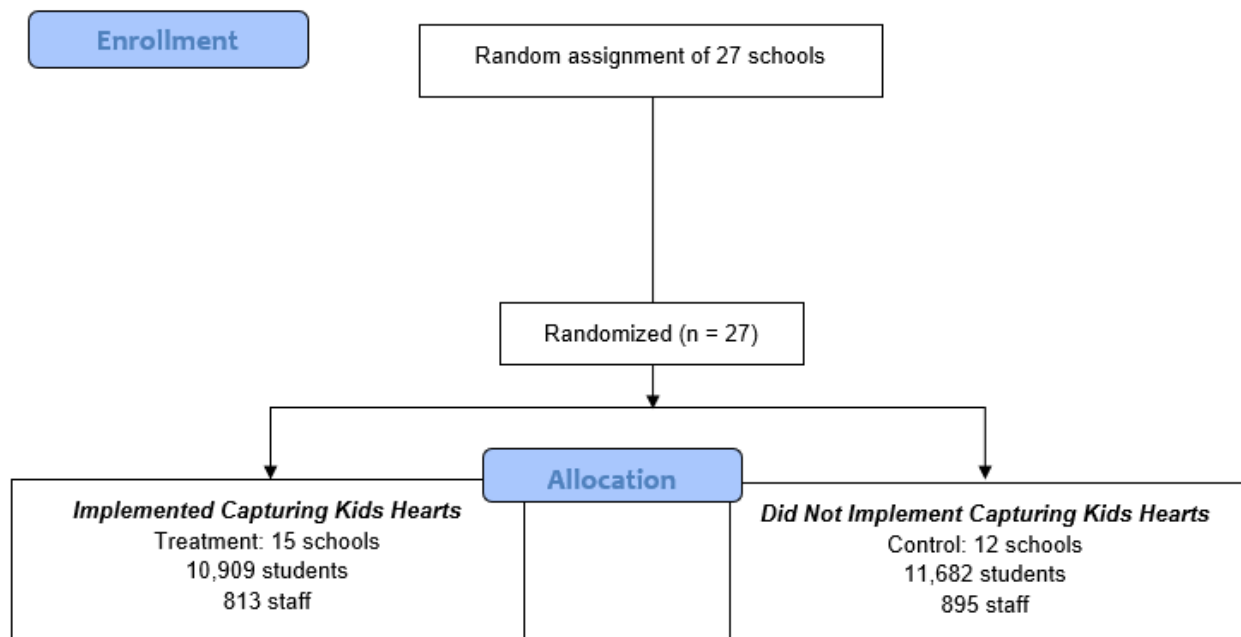
intervention and data collection period. Student self-report survey data were collected at three time points: in the fall of 2016 prior to implementation and in the spring of 2017 and 2018 in the first and second implementation years.

Table 1. Distribution of eligible staff attending CKH trainings.

CKH Training	Staff Eligible	Number of Staff eligible Trained	Percentage of Staff eligible Trained
<b>2015-16</b>			
Foundational Training	643	370	58%
Leadership Blueprint Training	37	18	49%
Process Champions	--	63	--
<b>2016-17</b>			
Teen Leadership	--	22	--
Teen Leadership Connection	--	15	--
Leadership Blueprint Recharged	33	10	30%
CKH New Hires	118	52	44%

Table 1 presents the distribution of eligible staff attending the various CKH trainings in 2015-16 and 2016-17. Of the 643 staff eligible for participation in Foundational Training, 370 (58%) received training. Of the 37 principals and assistant principals eligible for Leadership Blueprint Training, 18 (49%) completed the training. 63 eligible staff were trained in Process Champions. For 2016-17, 22 eligible staff completed Teen Leadership and 15 completed Teen Leadership Connection. Of the 33 principals and assistant principals eligible for Leadership Blueprint Recharged, 10 (30%) were trained.

Figure 2. Capturing Kids Hearts Consort Diagram.



## DATA COLLECTION PROCEDURE

Data collection started with the administration of an online survey to all school staff in the spring of 2016 to assess baseline measures of school climate (Table 2). CKH foundational training was delivered to all staff in treatment schools at the start of the school year (August 2016). As described above, selected teachers were trained to teach the Teen Leadership class in fall 2016. Process Champion training and Campus TrAction workshops and consultations— which aim to enhance the capacity of schools to implement CKH with fidelity—was provided to select staff during the first implementation year. In addition, refresher training for intervention schools (Capturing Kids’ Hearts Recharged) was provided at the start of year 2. Control schools received training after data collection was complete (July 2018).

Table 2. Data collection schedule

Measure	Year 0	Year 1	Year 2
Student-reported outcome measures			
Student surveys		Fall/spring	Spring
Discipline referrals	Spring	Spring	Spring
Teacher-reported outcome measures			
Teacher surveys	Spring	Spring	Spring
Teacher practice/fidelity measures			
Teacher implementation surveys (intervention only)		Fall/spring	Fall/spring
Principal interviews		Spring	Spring
Focus groups		Spring	Spring

**Data collection systems for outcomes.** Two data collection systems were implemented to facilitate outcome data collection: an incident tracking system for disciplinary referrals and an online survey data system. Data from these systems were merged using unique ID/access codes assigned to each student.

**Incident tracking.** WestEd tracked discipline referrals in both treatment and control schools utilizing the districts’ current systems for recording infractions. Site coordinators are responsible for “tagging” incident reports with the student ID codes for students involved in the incident so that the two data collection systems can be linked. Data on disciplinary referrals in the prior academic year (2015/16) were obtained to examine whether and how referrals change once CKH is implemented. However, because the intervention will likely have an impact on disciplinary referrals, the incident data was not used to estimate program impacts.

**Online survey system.** All staff were surveyed in the spring each year, with the data collected in May 2016 serving as the baseline data (see Table 1). All students in grades 6-8 were surveyed in each school, with baseline data collected in September 2016 and at the end of each implementation year (May 2017 and 2018). The same survey instrument was used at baseline and subsequent administrations. Students (and teachers) were assigned unique access codes that allowed WestEd to link baseline and outcome survey data, and link survey data to student involvement in referred incidents (data security and protection concerns are discussed in more detail in the human subjects narrative). The student rosters of the relevant grade 6-8 classrooms

in participating schools were obtained from the participating school districts at the start of each academic year, and unique access codes were assigned to each student. Only this access code will be entered into the online system to access the survey and provide linkage to follow-up surveys and to involvement in referred incidents.

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## DATA SOURCES

**Student Survey Data.** Student-level CKH survey data were collected over a three-year period from 2015-16 to 2017-18. The surveys asked students to report information regarding demographics and various experiences at school, such as relationships with adults, connectedness to school, as well as aggressive or violent behaviors. The response rate for the student surveys were 72% in 2016, 76% in 2017, and 86% in 2018. The sample consisted of 22,591 students which had data for at least one of the years.

**Staff Survey Data.** Staff CKH survey data were used from three time periods, Spring 2016, Spring 2017, and Spring 2018. These surveys asked staff to report their perceptions of students' connectedness to school, bonds between and among students and school staff, and students' personal and social competencies. The survey response rate for the staff surveys were 90% in 2016, 87% in 2017, and 79% in 2018.

**Archival Record Data.** Archival (i.e., administrative) data on students were provided by the districts of Charleston, Georgetown, Greenville, and Richland 02 for the years 2015-16, 2016-17, and 2017-18. The archival data comprised of student-level demographics, achievement, discipline, and attendance data which were received separately by district and year. The separate archival data were merged to create a single data file which consisted of 24,487 students.

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## MEASURES

### Student-reported Outcome Measures

We used measures from the California School Climate, Healthy, and Learning Survey (Cal-SCHLS) system to assess school climate and student engagement (Table 3).

**School Engagement.** School bonding was assessed using the identification/participation in school subscale (Ye & Wallace, 2014, You, Ritchy, & Furlong, 2011) from the Psychological Sense of School Membership (PSSM) scale (Goodenow, 1993). This subscale consisted of 6 items (for example, "I feel like a real part of this school") measuring school bonding (alpha = 0.76), with response categories ranging from 1 ("strongly disagree") to 4 ("strongly agree").

**School Relationships.** Caring adult-student relations is a 6-item scale that assesses the extent to which students believe they have caring relationships with adults ("At school, there is an adult who really cares about me") and supportive, high expectations messages from adults at school ("At school, there is an adult who tells me when I do a good job"). Response options ranged from 1 ("not at all true") to 4 ("very much true"). Teacher caring relationships and teacher

affirmation behavior are network items. Peer relational supports is a 5-item scale that asked students about their relationships with other students (“Students care about each other”), which has response categories ranging from 1 (“not at all true”) to 4 (“very much true”).

***Student Voice/Disciplinary Climate.*** Student voice/empowerment is a 4-item scale that measures the extent to which students believe they have an input in decisions at the school (“In our school, students are given a chance to help make decisions”), which has response categories ranging from 1 (strongly disagree) to 4 (strongly agree). Rule clarity is a 3-item scale that measures the degree to which students agree that rules are made clear at the school (“Students in this school know how they are expected to act”), which has response categories ranging from 1 (strongly disagree) to 4 (strongly agree). Student social expectations is a 5-item scale that measures to extent to which students agree that they have certain expectations (“Students in this school are expected to treat each other fairly”), which has response categories ranging from 1 (strongly disagree) to 4 (strongly agree).

***Student Competencies.*** Altruism is a 5-item scale measuring the extent to which students believe that they are altruistic towards others (“I would cheer up someone who is feeling sad”), which has response categories ranging from 1 (strongly disagree) to 4 (strongly agree). Empathy is a 7-item scale measuring the degree to which students believe that they are empathetic (“I am happy when a teacher says my friend did a good job”), which has response categories ranging from 1 (strongly disagree) to 4 (strongly agree). Social competence is a 9-item scale measuring the extent to which students handle social interactions effectively (“If two of my friends are fighting, I find a way to work it out”) and is measured on a scale from 1 to 5.

***Aggression/Violence.*** Aggression is an 8-item scale asking about how often students had committed aggressive or violent behaviors (e.g., “I fought back when someone hit me first” and measured on as scale from 0 to 6. Bullying and discrimination was assessed using 14-items asking about violence victimization and harassment/bullying on school property (e.g., “In the past 12 months, how many times on school property have you... been afraid of being beat up?). Response categories ranged from 0 (0 times) to 3 (4 or more times).

Table 3. Measurement matrix of outcome variables

<b>Construct</b>	<b>Items</b>	<b>Scale Range</b>
<b>Student-reported outcomes</b>		
<i>School Engagement</i>		
Staff bonding	5	1–4
<i>School Relationships</i>		
Caring adult-student relations	6	1–4
Teacher caring relationships	Network	1–4
Teacher affirmation behavior	Network	1–4
Peer relational supports	6	1–4
<i>Student Voice/Disciplinary Climate</i>		
Student decision-making input	5	1–4
Rule clarity	3	1–4
High student social expectations	5	1–4

<i>Student Competencies</i>		
Altruism	5	1–4
Empathy	7	1–4
Social competence	9	1–5
<i>Aggression/Violence</i>		
Aggression	8	0–6
Bullying and discrimination	14	0–3
<b>Staff-reported outcomes</b>		
<i>School Relationships</i>		
Adult-student personalization	5	1–4
Adult-student caring relationships	5	1–5
Staff trust in students	5	1–4
Peer supports	7	1–4
Staff collegiality	6	1–5
<i>Student Voice/Disciplinary Climate</i>		
Student voice/empowerment	4	1–4
Rule clarity	4	1–4
Staff fairness	2	1–5
<i>Staff Engagement</i>		
Staff efficacy	4	1–4
<i>Student Behavior</i>		
Student responsibility	6	1–4
Classroom disruptions	5	0–4
Violence/disruptive behavior	7	1–4
<b>Archival Record outcomes</b>		
Absences (excused/unexcused)	---	---
Tardies	---	---
Suspensions (in-school/out-of-school)	---	---
Discipline referrals	---	---
Test scores (ELA/math)	---	---

### **Staff-reported Outcome Measures**

As shown in Table 3, measures of school climate parallel to the student survey were included on the staff survey. Specifically, subscales for violence/disruptive behavior, delinquency, caring adult-student relationships, and rule clarity were developed (Hanson & Voight, 2014, Hanson, 2015). In addition, a 6-item measure of staff supportiveness was used (“How many adults at this school have close professional relationships with one another”).

### **Archival Record Outcomes**

Variables obtained from archival data and used as outcomes include the number of total absences, excused absences, unexcused absences, tardies, total suspensions, out-of-school suspensions, in-school suspensions, discipline referrals, as well as test scores for ELA and math assessments.

To prepare the archival record data for analysis, the archival record data were merged with the student survey data resulting in 25,836 total unique observations. Of those students, 21,242 had both archival data and CKH survey data in at least one year, while 3,245 students had archival data in at least one year but no survey data, and 1,349 students had CKH survey data in at least one year, but no archival data. A total of 116 cases contained no CKH survey data in any year, and contained some archival data (e.g., attendance, achievement, incident) in one or more years, but were missing demographic data (e.g., school name, grade, and gender data in all years). For these 116 cases, data on school name, grade, and gender were obtained from the student roster files.

Two grouping variables were used to identify unique schools. The variable *school ID 2* is a unique school identifier that represents the school a student attended in Year 1. The variable *school ID 3* is a school identifier that represents the school identified by the *school ID 2* variable but represents the school in Year 3 if the school is missing for the *school ID 2* variable, but not missing in Year 3. School-level means were computed for all student-reported, staff-reported, and archival record outcome variables. The school-level means were created by calculating the mean of each of the variables in 2015-16 within each of the attributes of the two school grouping variables (i.e., among all cases within each school).

Table 4. Number of cases with missing values in combined archival record/student survey data (N = 25,836) by variable and year.

Archival Record outcomes	Year 1		Year 2		Year 3	
	N	%	N	%	N	%
Absences	14,361	56	14,027	55	11,915	46
Excused Absences	14,361	56	14,027	55	14,037	56
Unexcused Absences	14,361	56	14,027	55	14,037	56
Tardies	18,154	70	17,792	69	17,912	69
Suspensions	21,780	84	21,654	83	17,888	69
Out-of-school suspensions	21,780	84	19,301	75	15,132	59
In-school suspensions	21,780	84	21,654	84	17,888	69
Referrals	21,780	84	21,654	84	17,888	69
ELA score	12,800	50	12,843	50	12,695	49
Math score	12,731	49	12,774	49	12,698	49

Table 4 presents the number and percentage of cases with missing values in the combined archival record/student survey data for each archival variable and year.

## ANALYSIS

Adjusted post-intervention outcomes for students in treatment schools were compared to the outcomes for their counterparts in the control schools. This involved fitting conditional multilevel regression models (i.e., hierarchical linear modeling [HLM]), with additional terms to account for the nesting of individuals within schools (see Goldstein 1987; Raudenbush & Bryk,

2002; Murray 1998). The study involves school level randomization and delivery of training at the school level. The design thus involves clustering at the school level, as students and teachers are nested within schools. The random effects of school is included in the models to account for the nesting of observations within schools. Fixed effects include the treatment group, baseline (pretest) measures of outcome variables (where available), and vectors of individual student-level covariates. The purpose of including statistical controls is to minimize random error and to increase the precision of the estimates.

The following type of three-level HLM, in reduced form, for a continuous outcome serves as an example. This analysis strategy is proposed for the student and staff reports of each outcome listed in Table 3:

$$Delinq_{ijk} = \alpha_0 + \beta_1 PreDelinq_{ijk} + \beta_2 Tx_k + \sum B_l I_{ijk} + \mu_k + \tau_{jk} + \varepsilon_{ijk}$$

where subscripts i, j, and k denote student, classroom, and school, respectively; Delinq represents the Cal-SCHLS 7-item delinquency scale, measured at the end of the first implementation year; PreDelinq represents the baseline measure of the outcome variable; Tx is a dichotomous variable indicating student attendance at the school assigned to the treatment where subscripts i, j, and k denote student, classroom, and school, respectively; Delinq represents the Cal-SCHLS 7-item delinquency scale, measured at the end of the first implementation year; PreDelinq represents the baseline measure of the outcome variable; Tx is a dichotomous variable indicating student attendance at the school assigned to the treatment condition; and I is a vector of other control variables for students, measured prior to exposure to the intervention. Lastly,  $\mu_k$  and  $\tau_{jk}$  represent random variables for schools and classrooms (clustering groups), respectively, and  $\varepsilon_{ijk}$  is an error term for individual sample members. In this model, the intervention effect is represented by  $\beta_2$ , which captures treatment/control school differences in changes in the outcome variable between pretest and posttest.  $\mu_j$  and  $\tau_{jk}$  capture random effects (intercepts) of school and classroom, which account for the positive intraclass correlations in the data. Simple extensions to model [1] allow us to examine differential effectiveness across subgroups by including interactions between treatment status and one of the variables in I. A two-level HLM analogous to [1] will be estimated for staff-reported outcomes.

**Analytic Procedure.** To estimate program impacts of the CKH intervention, multilevel panel regression models were performed to examine the longitudinal impacts and school-wide impacts of the CKH intervention, based on student survey data, staff data, and archival record data. For the continuous outcome variables (e.g., student-reported outcomes, staff-reported outcomes, test scores), linear regressions are conducted. For count outcome variables (e.g., number of absences, tardies, suspensions) negative binomial regression models are conducted.

First, to estimate longitudinal impacts, 1-year impacts were estimated based on the sample of respondents with non-missing data from 2015-16 (prior to implementation) and 2016-17 (first implementation year), and 2-year impacts were estimated based on the sample of respondents with non-missing data in 2015-16, 2016-17, and 2017-18 (second implementation year). In specific, a series of regression models were conducted predicting each student-reported, staff-reported, and archival record outcome in each of the implementation years (2016-17 and 2017-18) from treatment status, outcome in the baseline year prior to intervention, sex, and grade (in

the implementation year). To determine baseline equivalence, following each regression model, a regression was performed predicting the outcome measure in the baseline year (i.e., 2015-16) from the treatment status, based only on the cases used in the prior estimation sample.

For the archival record outcomes, two sets of longitudinal regression models are conducted for each year. When the outcomes are measured in the first implementation year, the first set of regression models are based on the analytic sample of all students in 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grade in 2016-17 but does not include the outcome variable at baseline as a covariate in the models, because not all cases will have a value for the covariate at baseline. The second set of regression models are based on the analytic sample of only 7<sup>th</sup> and 8<sup>th</sup> grade students in 2016-17 and includes the outcome variable at baseline as a covariate in the models. This is because 6<sup>th</sup> grade students in 2016-17 will not have data in 2015-16 because there is no data on students before the 6<sup>th</sup> grade (e.g., 5<sup>th</sup> grade). Similarly, when the outcomes are measured in the second implementation year, the first set of regression models are based on the sample of all 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> graders in 2017-18 but does not include the outcome variable at baseline as a covariate. The second set of regression models are based on the analytic sample of only 8<sup>th</sup> grade students in 2017-18 and includes the outcome variable at baseline as a covariate. This is because 6<sup>th</sup> and 7<sup>th</sup> grade students in 2017-18 would have missing data on the outcome in the baseline year.

Second, to estimate school-wide impacts, 1-year impacts were estimated based on the sample of all respondents with data in 2016-17 and 2-year impacts were estimated based on sample of all respondents with data in 2017-18 (controlling for school-level measures of outcomes assessed prior to intervention). A series of regression models were performed predicting each student-reported, staff-reported, and archival record outcome in each of the implementation years (2016-17 and 2017-18) from treatment status, school average of the outcome in the baseline year prior to intervention, sex, and grade (in the implementation year). To determine baseline equivalence, following each regression model, a regression was performed predicting the outcome measure in the baseline year from the treatment status, based only on the cases used in the prior estimation sample.



## RESULTS

### IMPLEMENTATION RESULTS

Table 5. Student-reported and teacher-reported implementation of CKH.

	Year 2		Year 3	
	Treatment %	Control %	Treatment %	Control %
<b>Student-reported implementation</b>				
Teachers greet students at the door all the time	37	25	38	27
Students and teachers co-create social contract in 4 or more classes	62	30	61	32
Students are asked to share personal information most of the time or more	37	25	38	27
Students correct others' misbehavior most of the time or more	29	26	30	26
<b>Teacher-reported implementation</b>				
Always greet students at the door before class	69	68	70	67
Worked with students in 4 or more classes to develop list of expectations	83	53	84	55
Often or always ask students to share positive personal experiences with class	67	17	65	18
Often or always share their own positive personal experiences with the class	67	56	72	55

Table 5 presents the percentage of students and teachers reporting how often specific components of CKH are implemented in both treatment and control schools.

In both implementation years, over one-third of students in the treatment group reported “all the time” compared to a quarter of the students in the control group when asked how often teachers greet students at the door. Over 60 percent of treatment students in both years reported “4 or more classes” compared to less than one-third of the control students when asked in how many classes students and teachers co-create a social contract. Close to 40 percent of treatment students reported “most of the time” or more compared to a quarter of the control students when asked how often students are asked to share personal information.

In both implementation years, about 70 percent of teachers in both groups reported “always” when asked how often they greet their students at the door. Over 80 percent of treatment teachers responded “4 or more classes” when asked how many classes they worked with students to develop a list of behavioral expectations compared to just over half of the control teachers. Nearly two-thirds of the treatment teachers responded “often” or “always” when asked how often they have students share positive personal experiences with their classes compared to only less than 20 percent of the control teachers. Over two-thirds of teachers in the treatment schools reported that they often or always share their own positive personal experiences with the class, compared to just over half in the control schools.

## STUDENT-REPORTED OUTCOMES

Tables 6 and 7 presents the longitudinal and school-wide cross-sectional impacts of the CKH intervention on student-reported outcomes. The results demonstrate that the CKH intervention did not have statistically significant effects on any of the outcome measures in both implementation years, whether estimating longitudinal impacts or school-wide cross-sectional impacts.

Table 6. Longitudinal panel regression results predicting student-reported outcomes, Implementation Year 1 and Year 2.

Impact measure	Implementation Year 1				Implementation Year 2			
	B	SE	p-value	N	B	SE	p-value	N
<b>School Engagement</b>								
School bonding	-0.07	0.04	0.11	5,402	0.00	0.02	0.82	2,847
<b>School Relationships</b>								
Caring adult-student relations	-0.06	0.06	0.35	5,216	-0.03	0.05	0.52	2,708
Teacher caring relationships	-0.05	0.06	0.40	5,096	-0.05	0.05	0.39	2,619
Teacher affirmation behavior	0.00	0.06	0.97	4,871	-0.03	0.06	0.61	2,480
Peer relational supports	-0.02	0.05	0.63	5,193	0.03	0.03	0.41	2,699
<b>Student Voice/Disciplinary Climate</b>								
Student decision-making input	-0.03	0.06	0.64	5,409	-0.01	0.06	0.86	2,846
Rule clarity	0.03	0.04	0.51	5,371	0.01	0.05	0.78	2,818
High student social expectations	0.03	0.04	0.52	5,385	0.03	0.05	0.52	2,825
<b>Student Competencies</b>								
Altruism	-0.01	0.03	0.83	5,334	0.01	0.03	0.69	2,786
Empathy	-0.03	0.05	0.59	5,339	0.00	0.03	0.99	2,787
Social competence	0.02	0.06	0.71	5,304	0.00	0.04	0.96	2,763
<b>Aggression/Violence</b>								
Aggression	0.04	0.09	0.62	5,190	-0.02	0.11	0.88	2,685
Bullying and discrimination	0.03	0.03	0.41	5,182	0.03	0.04	0.52	2,676

B=coefficient; SE=standard error

Note: Covariates include the outcome variable at baseline, gender, and grade in the same year.

Table 7. Cross-sectional panel regression results predicting student-reported outcomes, 1<sup>st</sup> and 2<sup>nd</sup> Implementation Years

Impact measure	Implementation Year 1				Implementation Year 2			
	B	SE	p-value	N	B	SE	p-value	N
<b>School Engagement</b>								
School bonding	-0.04	0.03	0.22	10,496	-0.01	0.01	0.61	11,935
<b>School Relationships</b>								
Caring adult-student relations	-0.03	0.04	0.45	10,265	-0.01	0.03	0.74	11,622
Teacher caring relationships	-0.01	0.05	0.87	10,066	0.02	0.04	0.58	11,315
Teacher affirmation behavior	0.03	0.05	0.54	9,839	0.06	0.04	0.14	11,027
Peer relational supports	-0.04	0.04	0.36	10,224	0.00	0.03	0.92	11,568
<b>Student Voice/Disciplinary Climate</b>								
Student decision-making input	0.02	0.06	0.68	10,503	0.05	0.04	0.25	11,939
Rule clarity	0.01	0.04	0.74	10,471	0.03	0.04	0.43	11,891
High student social expectations	0.01	0.04	0.82	10,476	0.03	0.04	0.47	11,894
<b>Student Competencies</b>								
Altruism	-0.03	0.02	0.20	10,411	-0.02	0.02	0.54	11,808
Empathy	-0.04	0.04	0.38	10,413	0.00	0.03	0.96	11,811
Social competence	-0.01	0.04	0.89	10,368	-0.02	0.03	0.55	11,733
<b>Aggression/Violence</b>								
Aggression	0.01	0.06	0.86	10,215	-0.05	0.07	0.48	11,532
Bullying and discrimination	-0.02	0.02	0.32	10,204	-0.03	0.02	0.24	11,512

B=coefficient; SE=standard error

Note: Covariates in the models include the school average of the outcome variable at baseline, gender, and grade in the same year.

## STAFF-REPORTED OUTCOMES

The CKH intervention was found to have consistent small impacts on several staff-reported outcome measures in both implementation years when estimating longitudinal impacts and school-wide cross-sectional impacts. Table 8 presents longitudinal panel regression results predicting staff-reported outcomes for implementation years 1 and 2. CKH was associated with small increases in adult-student caring relationships, peer supports, staff collegiality, student voice/empowerment, and rule clarity. In addition, CKH was associated with a decrease in violence/disruptive behavior. CKH was associated with small increases in adult-student personalization, peer supports, student voice/empowerment, and student responsibility, while being associated with a decrease in violence/disruptive behavior. Table 9 presents the cross-sectional panel regression results predicting staff-reported outcomes. In the first implementation year, CKH was associated with increases in adult-student caring relationships, staff trust in students, peer supports, staff collegiality, and student voice/empowerment, while being associated with a decrease in violence/disruptive behavior. In the second implementation year, CKH was associated increases in nearly all outcomes, while being associated with a decrease in classroom disruptions.

Table 8. Longitudinal panel regression results predicting staff-reported outcomes, Implementation Year 1 and Baseline.

Impact measure	Implementation Year 1				Implementation Year 2			
	B	SE	p-value	N	B	SE	p-value	N
<b>School Relationships</b>								
Adult-student personalization	0.06	0.03	0.09	771	0.09*	0.03	0.00	581
Adult-student caring relationships	0.13*	0.05	0.02	751	0.16	0.08	0.05	570
Staff trust in students	0.04	0.02	0.06	759	0.05	0.03	0.08	573
Peer supports	0.08*	0.04	0.02	772	0.18*	0.04	0.00	582
Staff collegiality	0.16*	0.06	0.01	751	0.16	0.10	0.11	570
<b>Student Voice/Disciplinatory Climate</b>								
Student voice/empowerment	0.15*	0.05	0.00	772	0.32*	0.06	0.00	582
Rule clarity	0.12*	0.05	0.01	768	0.16	0.08	0.05	576
Staff fairness	0.08	0.06	0.17	751	0.14	0.09	0.11	570
<b>Staff Engagement</b>								
Staff efficacy	0.01	0.04	0.85	757	0.05	0.04	0.29	573
<b>Student Behavior</b>								
Student responsibility	0.11	0.06	0.07	541	0.18*	0.05	0.00	412
Classroom disruptions	-0.03	0.04	0.36	544	-0.10	0.06	0.09	414
Violence/disruptive behavior	-0.14*	0.05	0.00	751	-0.17*	0.05	0.00	570

B=coefficient, SE=standard error

Note: The models include the outcome variable as a covariate.

Table 9. Cross-sectional panel regression results predicting staff-reported outcomes, 1<sup>st</sup> and 2<sup>nd</sup> Implementation Years.

Impact measure	Implementation Year 1				Implementation Year 2			
	B	SE	p-value	N	B	SE	p-value	N
<b>School Relationships</b>								
Adult-student personalization	0.06	0.03	0.07	984	0.13*	0.03	0.00	994
Adult-student caring relationships	0.15*	0.05	0.01	768	0.23*	0.10	0.02	975
Staff trust in students	0.05*	0.02	0.01	973	0.06*	0.02	0.00	980
Peer supports	0.09*	0.04	0.02	985	0.22*	0.03	0.00	993
Staff collegiality	0.19*	0.06	0.00	968	0.23	0.13	0.06	976
<b>Student Voice/Disciplinary Climate</b>								
Student voice/empowerment	0.16*	0.05	0.00	985	0.36*	0.06	0.00	994
Rule clarity	0.12	0.07	0.09	980	0.23*	0.11	0.04	987
Staff fairness	0.12	0.06	0.05	968	0.23*	0.08	0.00	974
<b>Staff Engagement</b>								
Staff efficacy	0.02	0.03	0.46	972	0.11*	0.04	0.00	979
<b>Student Behavior</b>								
Student responsibility	0.13	0.07	0.06	716	0.21*	0.04	0.00	772
Classroom disruptions	-0.06	0.05	0.18	718	-0.17*	0.06	0.00	726
Violence/disruptive behavior	-0.15*	0.06	0.02	767	-0.27	0.17	0.11	975

B=coefficient, SE=standard error

Note: The models include the school average of the outcome variable as a covariate.

## ARCHIVAL RECORD OUTCOMES

Tables 10 and 11 present the longitudinal and school-wide cross-sectional impacts of the CKH intervention on archival record outcomes. Table 10 presents the longitudinal panel regression results predicting archival record outcomes for students in grades 7 and 8 in the first implementation year and grade 8 in the second implementation year, with the with outcome variable at baseline as covariate. CKH is associated with a statistically significant decrease in the expected rate of absences and referrals in the first year of implementation. In Year 2, CKH was associated with a statistically significant decrease in the expected rate of tardies, but an increase in the rate of unexcused absences. In the baseline year, there were statistically significant differences between students in CKH schools and non-CKH schools with respect to tardies and discipline referrals. Students attending CKH schools had a higher expected rate of tardies and a lower rate of referrals.

Table 10. Longitudinal panel regression results predicting archival record outcomes for students in grades 7 and 8 in the first implementation year and grade 8 in the second implementation year (with outcome variable at baseline as covariate).

Impact measure	Implementation Year 1				Implementation Year 2			
	B/IRR	SE	p-value	N	B/IRR	SE	p-value	N
Absences	0.89*	0.04	0.01	7,037	1.02	0.06	0.76	3,169
Excused Absences	1.01	0.05	0.87	7,037	1.13	0.07	0.07	3,169
Unexcused Absences	0.96	0.05	0.48	7,037	1.16*	0.08	0.03	3,169
Tardies	0.97	0.05	0.53	4,783	0.83*	0.06	0.02	2,084
Suspensions	0.91	0.09	0.37	1,719	0.97	0.13	0.79	749
Out-of-school suspensions	1.05	0.15	0.76	1,719	0.90	0.17	0.55	749
In-school suspensions	1.03	0.19	0.88	1,719	1.28	0.32	0.33	749
Referrals	0.15*	0.08	0.00	1,719	0.48	0.30	0.24	749
ELA score	0.02	0.04	0.59	7,783	0.01	0.06	0.92	3,575
Math score	-0.03	0.04	0.46	7,840	-0.05	0.07	0.43	3,592

Note: Covariates in the models for Implementation Year 1 include the *outcome variable at baseline*, gender, and grade in the same year. The incidence rate ratio (IRR) is reported for all count outcome measures. ELA and math score outcomes are standardized within grade.

Table 11. Cross-sectional panel regression results predicting archival record outcomes in both implementation years

Impact measure	Implementation Year 1				Implementation Year 2			
	B/IRR	SE	p-value	N	B/IRR	SE	p-value	N
Absences	0.97	0.03	0.40	11,729	1.09*	0.03	0.00	13,808
Excused Absences	0.93*	0.03	0.04	11,729	1.12*	0.04	0.00	11,352
Unexcused Absences	1.09*	0.04	0.03	11,729	1.14*	0.04	0.00	11,352
Tardies	0.91*	0.04	0.04	7,964	0.89*	0.04	0.01	7,693
Suspensions	1.03	0.09	0.68	4,152	1.00	0.08	0.99	4,294
Out-of-school suspensions	1.90*	0.20	0.00	6,505	1.27*	0.14	0.03	6,920
In-school suspensions	1.13	0.15	0.35	4,152	0.99	0.12	0.94	4,294
Referrals	0.35*	0.15	0.02	4,152	0.27*	0.09	0.00	4,294
ELA score	0.12	0.14	0.38	12,992	0.19	0.16	0.24	13,138
Math score	0.17	0.15	0.24	13,061	0.17	0.17	0.32	13,135

Note: Covariates in the models for Implementation Year 1 include the school average of the outcome variable at baseline, gender, and grade in same year. Covariates in the models for Implementation Year 2 include the school average of the outcome variable at baseline, gender, and grade in same year. The incidence rate ratio (IRR) is reported for all count outcome measures. ELA and math score outcomes are standardized within grade.

Table 11 presents the cross-sectional panel regression results predicting archival record outcomes in both implementation years 1 and 2. In the first implementation year, the CKH intervention was associated with a significant decrease in excused absences, tardies, and referrals, but associated with an increase in unexcused absences and out-of-school suspensions. Being in a CKH school (compared to a non-CKH school) decreases a student's expected rate of absences by a factor of 0.93, tardies by a factor of 0.91, and disciplinary referrals by a factor of

0.35. Students in the CKH intervention schools, compared to those in non-CKH schools are expected to have a rate 1.09 times greater for unexcused absences and 1.90 times greater for out-of-school suspensions. In the second implementation year, CKH was associated with a decrease in the rate of tardies and discipline referrals. However, it was associated with an increase in the rate of absences, excused absences, unexcused absences, and out-of-school suspensions. Being a student in a CKH school decreases the rate of tardies by 0.89 and referrals by 0.27. Students in CKH schools have a rate 1.09 times greater for absences, 1.12 times greater for unexcused absences, 1.14 times greater for unexcused absences, and 1.27 times greater for out-of-school suspensions.

## IMPLICATIONS

CKH was a well-implemented intervention. Overall, the evaluation results indicate mixed results of CKH when considering student-reported, staff-reported, and district archival outcomes. Based on students' perceptions, CKH did not enhance relationship bonds between and among students and teachers, increase students' social competencies, and reduce aggression and violence. However, based on staff perceptions, CKH appeared to have small but consistent positive impacts on various aspects of school relationships, student voice/disciplinary climate, and student behaviors, both at the individual level and schoolwide. For the archival record measures, the evidence was mixed regarding student attendance and discipline outcomes, although there were consistently no impacts of CKH on both ELA and Math test scores. However, some of these effects may be the result of differences between students in the intervention and non-intervention schools at baseline.

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