

Promoting School Safety: A Comprehensive Emotional and Behavioral Health Model

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Table of Contents

Section	Pages
Purpose	1-2
Project Participants	2-3
Project Design and Methods	3-6
Data Analyses	7-9
Results	9-19
Implications for Criminal Justice Policy and Practice	20-22
References	23-24
Appendices	25-53

Purpose

Baltimore County Public Schools (BCPS) with funding from the U.S. Department of Justice, Office of Justice Programs, National Institute of Justice, Developing Knowledge about What Works to Make Schools Safe solicitation, partnered with the National Center for School Mental Health at the University of Maryland School of Medicine (NCSMH) to address the significant school safety issue of student emotional and behavioral health crises. In 2012, BCPS implemented a five-year strategic plan known as Blueprint 2.0: Our Way Forward. One of the major goals of the plan states: “Every school and office will be safe and secure, promote individual wellbeing and provide positive, respectful and caring environments for teaching, learning and working.” The plan’s “key actions” call for the “equitable access to counseling, social work, and psychological and other support services” as well as more “internal and external partnerships to improve delivery of mental health and other supportive services.”

In October 2013, BCPS established a high-level Urgent Crisis Intervention Committee. It was comprised of administrators, office heads, and supervisors within the school district and interagency partners from the Department of Health Department of Social Services, Baltimore County Police, area hospitals, Baltimore County Response System and others. The committee was asked to address mounting concerns over the growing number of students, who displayed intense emotional behaviors that could not be quickly diffused, modified, or resolved. Students acted out in class and in central offices; threatened classmates, teachers, principals, school buildings, and themselves; and engaged in other behaviors that were troubling and potentially dangerous.

The committee noted that schools had been left with limited options in terms of a response. In less serious cases, the school counselor, school psychologist, or school social worker could intervene during the incident and follow-up with the student in the days following it. Parents were also called upon to help. In more serious cases and after internal supports (e.g. school psychologist) were utilized or deemed insufficient schools called either 911 or the Baltimore County Mobile Crisis Team. In the absence of a well-defined protocol within schools, along with adequate supports and resources, police and other “external” options would be the default response among school administrators facing students with emotional and behavioral crises.

The problems facing BCPS are hardly unique. Schools across the country are struggling with how to formulate comprehensive and effective programs to address the mental health needs of students and thereby help preserve school safety. The stakes are high for individuals and institutions. The interdisciplinary Group on Preventing School and Community Violence (IGPSCV) puts it in stark terms:

“Effective prevention cannot wait until there is a gunman in a school parking lot. We need resources such as mental health supports and threat assessment teams in every school and community so that people can seek assistance when they recognize that someone is troubled and requires help...this speaks to a need for increased access to well integrated service structures across mental health, law enforcement, and related agencies” (IGPSCV 2012, p.1)

The “worst case” scenario is always a possibility. However, crises in the school environment more typically include a continuum of incidents related to students’ emotional and behavioral health and various factors that may influence it. Recent studies show that 13-20% of U.S. children experience a mental, emotional, or behavioral disorder each year (National Research Council and Institute of Medicine; see also Centers for Disease Control and Prevention, 2014). The rates tend to be higher for at-risk children—for example, those living in poverty, foster care, or stressful home environments. Unfortunately, relatively few children with identified emotional and behavioral disorders are treated for them. Several studies estimate that only 10-40% of children with such disorders receive any treatment at all, with the lowest numbers for minority children and those in poverty (Children’s Defense Fund, 2010; Child and Adolescent Action Center 2010; Merikangas et al, 2011).

Children who do not receive treatment for emotional and behavioral disorders (EBD) are at risk for problems both inside and outside of school, including problems with social relationships, academic difficulties, and chronic behavior problems including aggression and noncompliance (Kauffman, 1997). Without intervention, children in this situation are also at risk for suspension, expulsion and future criminal behavior (Committee on School Health, 2003; Fabelo et al., 2011; Monahan, Vanderhei, Bechtold, & Cauffman, 2014).

In addition, when students are out of school due to disciplinary actions they are more likely to engage in delinquent and criminal behaviors such as fighting, carrying a weapon, and using drugs (Monahan, 2014). Thus, suspended or expelled youth are more likely to have contact with the juvenile justice system through arrest or incarceration (Centers for Disease Control 1994; Committee on School Health 2003; Fabelo et al. 2011; Henry & Thornberry 2010). The more times a student is suspended or expelled, the greater risk that he/she will become part of the school-to-prison pipeline that characterizes many at-risk young people (Monahan et al., 2014). It is also important to note that ethnic minority students are disproportionately suspended and expelled from school when compared to similar age peers (APA, 2008; Krezmien, Leone, & Achilles, 2006; Losen & Gillespie, 2012; Raffaele & Knoff, 2003; Ruck and Wortley, 2002; The Civil Rights Project, 2000).

In response to the above and related issues, the BCPS Urgent Crisis Intervention Committee highlighted the need to: 1) Review current practices and procedures for handling threatening behaviors of students in crisis and determine the resources needed to address these behaviors. 2) Review and update the “threat management procedures” in the Emergency Management Guide for school-based administrators. 3) Develop resources and supports for school administrators dealing with students in emotional crisis before calling 911 or the Mobile crisis team. The committee highlighted the gaps in the current system of: 1) Responding to emotional and behavioral health crises, and 2) Preventing these events by providing prevention and intervention resources to appropriately address student emotional and behavioral health needs.

The purpose of the research was to test the impact of a new comprehensive emotional and behavioral health crisis response and prevention (EBH-CRP) intervention, building on the foundation provided by the Urgent Crisis Intervention Committee as noted above. The EBH-CRP intervention is a comprehensive training, organization, and support protocol for school and community stakeholders aimed at increasing school/community competence in responding to and preventing student emotional and behavioral health crises. It uses evidence-based, culturally competent, school-informed strategies that address emotional and behavioral health concerns across the continuum and are efficiently coordinated across child serving systems. This intervention builds on existing school and community resources to implement a streamlined emotional and behavioral health crisis response and prevention protocol and continuum of services.

Project Participants

At the start of the project period (2014-2015 school year), BCPS served over 108,000 students in 173 schools and centers, making it the 26th largest school district in the country in terms of number of students enrolled. The student population is remarkably diverse in terms of race, ethnic origin, and income. The demographics of BCPS students are as follows: 43.2% Caucasian, 38.7% African-American, 7.2% Hispanic, 6.4% Asian and 4.0% Multi-racial. BCPS families come from 110 countries and speak 89 languages at home. The BCPS population has become poorer and increasingly mobile over the last decade. Forty-six (46%) of BCPS school children are eligible for free or reduced price meals, a 60% increase during the last 10 years. The district has also experienced a 222% increase in the number of homeless children over the last decade with nearly 2,000 in this category.

After thoughtful consideration of potential target samples within BCPS, it was determined that addressing EBH crises across the continuum of grade levels would allow for the best understanding of this safety issue. By using all school levels, it was also determined that it would enhance the facilitation of replication of the intervention to other schools in the future. To employ and evaluate the EBH-CRP intervention across the continuum of grade levels, it was determined that “feeder patterns” within BCPS that are matched on key demographic variables, including race/ethnicity, poverty, and current EBH supports, would be randomized to receive the EBH-CRP intervention or participate in the comparison condition. BCPS feeder patterns are developed based on geography and typically include one high school, 2-4 middle schools, and 5-10 elementary schools.

Given this, two sets of feeder patterns matched on key demographic variables (Mental Health Risk, Enrollment, Free and Reduced Meals, Race/Ethnicity, availability of community-partnered school mental health services) were randomly assigned with one feeder pattern in each set receiving the intervention and one in each set participating in the comparison condition. After this randomization, there were 20 intervention schools with the following breakdown: 13

elementary schools, 5 middle schools and 2 high schools, and 20 comparison schools: 14 elementary schools, 4 middle schools, 2 high schools. Intervention and comparison group demographic information at baseline (SY0) is presented below.

Student Enrollment: Results from an Independent Samples t-test demonstrated that there was no evidence of a difference in school size at baseline between conditions ($t(38) = -1.11, p > .05$).

Race/Ethnicity: A series of Independent Samples t-tests were conducted to examine differences in mean percentage of student racial/ethnic groups at baseline between the intervention and comparison schools. Results revealed statistically significant differences in mean percentage of Asian American/Pacific Islander students ($t(38) = -4.31, p < .05$) at baseline (SY0) between the intervention ($M = 10.78\%$, $SD = 5.75\%$) and comparison ($M = 3.95\%$, $SD = 4.14\%$) schools. There were also statistically significant differences in mean percentage of Hispanic/Latino students ($t(23) = 2.47, p < .05$) at baseline between the intervention ($M = 6.14\%$, $SD = 2.38\%$) and comparison ($M = 10.36\%$, $SD = 7.25\%$) schools. Levene's test indicated unequal variances ($F = 4.70, p = .037$), thus degrees of freedom were adjusted from 38 to 23. Taken together, these results indicated that there was greater representation of Asian American/Pacific Islander students and fewer representations of Hispanic/Latino students in the intervention schools compared to the comparison schools during the baseline year. There was a marginally significant difference in the mean percentage of students with unknown racial/ethnic identity ($t(20) = 2.13, p = .05$) at baseline between the intervention ($M = 0.41\%$, $SD = 0.30\%$) and comparison ($M = 1.36\%$, $SD = 1.97\%$) schools. Levene's test indicated unequal variances ($F = 7.98, p = .007$), thus degrees of freedom were adjusted from 38 to 20.

There was no evidence of differences in mean percentage of African American/ Black, American Indian, European/White, and Multi-racial students at baseline between conditions.

Free and Reduced Meals (FARMS): Results from an Independent Samples t-test revealed a statistically significant difference in average percentage of students receiving FARMS at baseline between groups ($t(38) = 4.51, p < .05$). More specifically, intervention schools ($M = 44.42\%$, $SD = 12.91\%$) had a smaller percentage of students eligible for free and reduced meals than comparison schools ($M = 67.00\%$, $SD = 18.28\%$) at baseline.

Attendance Rate: Results from an Independent Samples t-test revealed a marginally significant difference in student attendance rate at baseline ($t(38) = -2.03, p = .05$) between conditions, with a marginally higher mean student attendance rate during SY0 in intervention schools ($M = 94.75\%$, $SD = 1.19\%$) compared to comparison schools ($M = 93.57\%$, $SD = 2.30\%$).

Suspension Rate: Independent Samples t-test results also indicated that there was no significant difference in mean suspension rates at baseline between intervention and comparison schools ($t(30) = 1.05, p > .05$). Levene's test indicated unequal variances ($F = 5.73, p = .022$), thus degrees of freedom were adjusted from 38 to 30.

Post hoc tests following randomization indicate that overall, intervention and comparison schools were comparable on a number of key demographic indicators. Study analyses controlled for any baseline differences by condition.

Project Design and Methods

The study employed a randomized controlled design to evaluate the impact of the EBH-CRP model on school safety, emotional and behavioral health outcomes and stakeholder knowledge and preparedness to address emotional and behavioral health concerns across the continuum. A cost-benefit analysis assessed the net benefits of the EBH-CRP intervention. Data from the 2014-2015 school year was collected for intervention and comparison schools and served as baseline statistics. The EBH-CRP intervention was implemented in intervention schools in the 2015-2016 school year (Intervention Year 1) and the 2016-2017 school year (Intervention Year 2).

EBH-CRP Intervention: The EBH-CRP intervention is a comprehensive training, organization, and support protocol for school and community stakeholders aimed at increasing school/community competence in responding to and preventing student emotional and behavioral health crises. The EBH-CRP intervention used evidence-based,

culturally competent, school-informed strategies to address emotional and behavioral health concerns across the continuum that could be efficiently coordinated across child-serving systems. This intervention was built on existing school and community resources to implement a streamlined emotional and behavioral health crisis response and prevention protocol and comprehensive continuum of services including universal prevention, early identification, assessment and service linkage, crisis response and post crisis relapse prevention.

The EBH-CRP model utilizes a five-tier approach to address emotional and behavioral health concerns across the continuum of services and supports including universal emotional and behavioral health and safety promotion and prevention, early intervention, and crisis response and relapse prevention. This model builds on the Multi-Tiered System of Student Emotional and Behavioral Health Supports (MTSS) employed by BCPS, and other schools across the nation, to address emotional and behavioral concerns are varying levels of intensity for differing levels of need (NCSMH, 2018). Many MTSS models include three tiers of support (e.g. see <https://theshapesystem.com> for full definitions of each tier). The EBH-CRP model expands the third tier to enhance the intervention schools' capacity and resources to address emotional and behavioral health crises and promote relapse prevention (tiers 4 and 5). Through the utilization of a multi-tiered approach, the intervention employs evidence-informed strategies to reach all students in tier I and more targeted, intensive interventions to reach individual students with the greatest needs in tier 5. Each tier encompasses at least one intervention of the EBH-CRP model described below. (See Appendix 1 for additional EBH-CRP component descriptions)

Tier 1: Universal Prevention aimed at reaching all students through improvement in school climate with the **Safe School Ambassador Program (SSA)**. SSA is an evidence-based, student-centered program for reducing bullying and school violence. The SSA Program engages the socially influential leaders of a school's diverse student groups and equips them with effective, non-violent communication and intervention skills they can use with their peers to prevent, stop, and report bullying, cyber-bullying, and harassment. Students are trained to notice mistreatment in the areas of exclusion, put downs, bullying, unwanted physical contact and acts against campus. Students meet regularly throughout the year with school staff trained in the SSA model to debrief on mistreatments that they have observed or intervened with. The SSA program offers students the new skills and supports to lead by example within their individual friend groups and the greater school environment in order to reduce the severity and frequency of mistreatment of others. (See appendix 1-Safe School Ambassadors).

The enhancement of **Positive Behavioral Supports** provided schools with training on managing conflict in the classroom and funding to obtain tools to enhance coping and self-regulation areas throughout the school building that were accessible for students. Through the utilization of positive behavioral supports, schools teach students expected behaviors and social skills and support positive relationships and self-regulation.

Tier 2: Early Identification of EBH concerns was addressed through the use of **Kognito At-Risk Online Training**. Kognito provided staff with online simulations of real life situations related to students' emotional and behavioral health to increase staff's skills in identifying, approaching, and referring students when they notice a concerning incident, sign or symptom. Kognito provides staff with an opportunity to practice and role-play real life situations by communicating with virtual humans. This opportunity helps to build their skills in motivational interviewing and other evidence-based communication techniques. Kognito teaches staff who otherwise may not have knowledge of emotional and behavioral health symptoms to recognize symptoms, communicate with students and families and seek assistance when needed from school counselors, administration, school nurses or other more intensely trained staff within their school building and/or community to support their students. Eighty percent of all intervention staff completed the Kognito At-Risk training. (See appendix 2-Kognito).

Tier 3: Assessment and Service Linkage focused on mapping and coordinating existing school/community EBH supports and streamlining referral and assessment processes. This included a detailed interview documented with participating intervention schools regarding the staff within the school who have roles that focus on supporting students' emotional

and behavioral health, calculation of the frequency of students who seek assistance from these school staff, what assistance was sought and the interventions or outcomes most frequently utilized by the supporting staff. These interventions and frequency of interventions was documented on a **School Resource Map** for each intervention school. By mapping the resources already existing in a school setting, the EBH grant staff were able to develop a **Crisis Resource List** for community agencies to support students when additional resources are requested. The creation of the School Resource Map and Crisis Resource List assisted EBH grant staff with supporting school staff, students and families in an emotional and behavioral crisis. (See appendix 3-School Resource Map).

Tier 4: Crisis Response was provided to schools through the development and implementation of a standardized crisis response, culturally-sensitive, school-informed protocol focused on de-escalation and diversion. Crisis response was implemented by school district mobile crisis coordinators who were licensed certified social workers. Each set of intervention schools was organized via a feeder pattern including a high school and those middle and elementary schools that students rise from into the higher grade levels. The feeder patterns were in the same geographical area. A crisis coordinator was assigned to a feeder system, geographical area. Schools were asked to contact the crisis coordinator assigned to their school feeder pattern when a student was in crisis and the school would have otherwise contacted the Baltimore County Mobile Crisis unit. An EBH crisis was defined by the EBH-CRP protocol as, “marked and ongoing aggression, impulsivity, erratic actions, irritability, anger, anxiety, sadness, and or bizarre actions or statements in which student is unable and/or unwilling to respond to school routines and interventions as normally provided.” By contacting a crisis coordinator in the feeder pattern geographical area for support, schools were able to access a licensed clinical social worker with knowledge and experience of EBH symptoms and community resources to quickly provide assistance with de-escalation, suicide and risk assessments, guidance and referral to outside EBH services as needed in a timely manner. Throughout the two intervention years, EBH crisis coordinators responded to a total of 194 immediate crisis calls and supported intervention schools with 364 non-crisis interventions across the 20 intervention schools.

Life Space Crisis Intervention (LSCI) is an intervention that was identified to use in tier 4 of the EBH-CRP model and focused on evidenced-based, cognitive behavior modification, de-escalation, and pro-social skills training. Life Space Crisis Intervention (LSCI) was one of the skill sets used by crisis coordinator when interacting with a student in crisis identified by a feeder pattern school for assistance. In addition to the use by crisis coordinators during an EBH crisis, staff in intervention schools were trained in LSCI to use in their daily interactions with students. LSCI trained staff included school administration, teachers, school counselors, paraeducators, school social workers and psychologists. LSCI training enables school staff to prevent and resolve crises. LSCI also focuses on building good relationships with youth to help youth learn to change repetitive patterns of self-defeating behaviors. Throughout the two intervention years, 148 staff across the 20 intervention schools were trained in LSCI. (See appendix 4-LSCI).

Tier 5: Post-Crisis Relapse Prevention was addressed through the development of a manualized, evidence-informed procedure, the Process for Crisis Assessment and Relapse Prevention (P-CARP). The P-CARP is designed to help school emotional and behavioral health teams to evaluate why a particular Emotional and Behavioral Health Crisis Incident occurred and to plan what post-crisis response should be enacted to help prevent a similar crisis from re-occurring with this student. The P-CARP also documents team activities in response to the crisis, both during the incident itself to de-escalate the situation, and in the weeks following to prevent recurrence. (See Appendix 5- P-CARP).

Comparison Condition:

The EBH-CRP model was implemented in the intervention schools while comparison schools continued to employ existing BCPS resources and supports and respond to EBH crises using their current systems and resources.

EBH-CRP Tiers and Associated Intervention Components



Data Collection Procedures and Dates of Data Collection

Survey Name	Measure Description	Data Collection Dates and Respondents
EBH-PKS	The Emotional and Behavioral Health Preparedness and Knowledge survey (EBH-PKS) is an 18-item questionnaire. Staff were asked to respond to items based on how much they agree with each item on a 6-point Likert scale (1 = Strongly Agree; 5 = Strongly Disagree). Additional questions were added to the EBH-PKS in the final data collection time point.	Administered to school staff at 3 time points, including: Fall SY1, Spring SY1, Spring SY2.
Principal Survey	The Principal Survey varied in length in Year 1 and Year 2. Principals were asked to respond to items asking about emotional and behavioral health incidents and staff knowledge and preparedness for the respective school year.	Administered to all school principals at 2 time points, including: between spring and summer SY1 and Spring SY2.
LSCI	The Life Space Crisis Intervention (LSCI) survey is a 22-item questionnaire. Staff were asked to complete the pre-test before the training and post-test immediately following training. Staff responded to Likert-type questions about their confidence and understanding of crisis-related concepts and skills.	Administered to all school staff who participated in the LSCI training during 2 time points, including: Fall SY1 and Summer before SY2.
Incident Reports	<p>The Emotional and Behavioral Health Crisis Incident Report is a 1-page form that documents incident type, frequency, response and disposition. Staff were asked to provide descriptive information about the crisis incident and response and disposition procedures. (See Appendix 3)</p> <p>*Incidents reports were initially collected as an online survey in SY1 with additional data fields but, due to lack of reliable completion, the incident report was adapted to 1-page paper form completed in the end of Y1 and all of Y2.</p>	Completed by school staff after responding to an EBH crisis throughout the academic year during SY1 and SY2.
SSA Students	The Safe School Ambassadors (SSA) Student surveys include pre, post and year end surveys. Students who participated in the SSA program completed the surveys.	Administered to SSA student participants prior to SSA training Y2, Post SSA training Y2 and Year End Y2.
SSA Adults	The Safe School Ambassadors Adult surveys include pre, post and year end surveys. Adults who	Administered SSA staff participants prior to SSA training Y2, Post SSA training Y2 and Year End Y2.

Final Summary Report for the National Institute of Justice, Office of Research and Evaluation
Promoting School Safety: A Comprehensive Emotional and Behavioral Health Model

	participated in the SSA program completed the surveys.	
Kognito	The Kognito survey is a 23-item questionnaire. Staff were asked to complete the pre-test before the training, post-test immediately following training, and follow-up two months after completing the training. Staff responded to Likert-type questions about their confidence and understanding of crisis-related concepts and skills.	Administered to all school staff who participated in the Kognito training throughout SY1 and SY2.

School System Data

A number of data categories were collected by the school system during SY0, SY1 and SY2. A list of these secondary data are included below.

1. Official number and length of suspensions by school, gender and race
2. Number of and outcomes for risk assessments completed* (assessment completed after reported risk of harm to self)
3. Number of threat assessments completed
4. Number of bullying reports completed
5. School counselor cumulative reports
6. School pupil personnel workers' cumulative reports
7. School resource officers' cumulative reports
8. School psychologists' cumulative reports
9. Community mental health cumulative reports
10. Total enrollment by school
11. Partnership for Assessment of Readiness for College and Careers (PARCC) scores as relevant (yearly standardized academic achievement tests)
12. Official number of office discipline referrals (disciplinary action when student is referred to school administrator)
13. Number of times Baltimore County Mobile Crisis was utilized
14. Number of students referred to juvenile justice services
15. School behavioral interventionists' cumulative reports*
16. Attendance by school
17. Number of students suspended to the superintendent's designee** (for additional disciplinary review/action)
18. Number of arrests by school and category**
19. School system yearly multi-stakeholder (student, parent, educator, administrator) school survey (including items on school climate).

* Data unavailable for some schools for all school years

** Data unavailable for SY0

Data Analyses

The **primary goal** of the evaluation is to measure clear changes in specific school safety and discipline outcomes in intervention schools versus comparison schools, while the **secondary goal** is to measure process variables that are critical to understanding the mechanisms that influence the change process and inform potential modifications to the intervention. In addition, a cost-benefit analysis was conducted.

The impact of the EBH-CRP intervention on school safety outcomes was evaluated by comparing pre-post changes in direct measures of school safety, discipline and emotional and behavioral health outcomes in the intervention schools versus the comparison schools over two intervention school years. The impact of the EBH-CRP intervention on stakeholder knowledge and preparedness to address emotional and behavioral health across the continuum was measured by comparing pre-post changes in diverse stakeholder perceived knowledge and preparedness to address emotional and behavioral health concerns in intervention versus comparison schools. Intervention school participants that participated in specific training components also reported on pre-post changes in knowledge, preparedness and skills to address emotional and behavioral health concerns. A cost benefit analysis was completed to assess the net benefits of the EBH-CRP intervention over the project period. Specific data analytic methods used for each question are described within the results section for the sake of clarity.

Results

The primary goal of this randomized controlled trial was to evaluate the impact of the EBH-CRP intervention on school safety and discipline outcomes.

Suspensions, Office Referrals, Bullying Reports and Juvenile Justice Referrals

Because our dependent variables were count data and over-dispersed, Poisson regression models predicting student suspensions, office referrals, bullying reports and juvenile justice referrals were run. We analyzed the difference between the number of each of these outcomes in intervention versus comparison schools in intervention year 2 while controlling for enrollment and number of these outcomes in the year before the intervention (baseline).

Suspensions

Total Sample: There were **significantly fewer suspensions in intervention schools** compared to comparison schools in intervention year 2 while controlling for total enrollment and baseline number of suspensions. Comparison schools had 56% more suspensions compared to intervention schools in intervention year 2 while controlling for total enrollment and baseline number of suspensions (See Table 1).

By School Level: At the elementary school level, there were significantly fewer suspensions in intervention schools compared to comparison schools in intervention year 2 while controlling for total enrollment and baseline number of suspensions. **Comparison elementary schools had 45% more suspensions compared to intervention schools** in intervention year 2 while controlling for total enrollment and baseline number of suspensions (See Table 1).

At the middle school level, there were significantly fewer suspensions in intervention schools compared to comparison schools in intervention year 2 while controlling for total enrollment and baseline number of suspensions.

Comparison middle schools had 151% more suspensions compared to intervention schools in intervention year 2 while controlling for total enrollment and baseline number of suspensions (See Table 1).

At the high school level, there were fewer suspensions in intervention schools compared to comparison schools in intervention year 2 while controlling for total enrollment and baseline number of suspensions but this difference was not statistically significant. **Comparison high schools had 28% more suspensions compared to intervention schools** in intervention year 2 while controlling for total enrollment and baseline number of suspensions (See Table 1).

Office Referrals

Total Sample: There were **significantly fewer office referrals in intervention schools** compared to comparison schools in intervention year 2 while controlling for total enrollment and baseline number of office referrals. Comparison schools had 75% more office referrals compared to intervention schools in intervention year 2 while controlling for total enrollment and baseline number of office referrals (See Table 1).

By School Level: At the elementary school level, there were significantly fewer office referrals in intervention schools compared to comparison schools in intervention year 2 while controlling for total enrollment and baseline number of office referrals. **Comparison elementary schools had 41% more office referrals compared to intervention schools** in intervention year 2 while controlling for total enrollment and baseline number of office referrals (See Table 1).

At the middle school level, there were significantly fewer office referrals in intervention schools compared to comparison schools in intervention year 2 while controlling for total enrollment and baseline number of office referrals. **Comparison middle schools had 104% more office referrals compared to intervention schools** in intervention year 2 while controlling for total enrollment and baseline number of office referrals (See Table 1).

At the high school level, there were significantly fewer office referrals in intervention schools compared to comparison schools in intervention year 2 while controlling for total enrollment and baseline number of office referrals. **Comparison high schools had 99% more office referrals compared to intervention schools** in intervention year 2 while controlling for total enrollment and baseline number of office referrals (See Table 1).

Bullying Reports

Number of bullying incidents were marginally higher in comparison schools relative to intervention schools, but this difference was not statistically significant ($p = .22$) (See Table 1).

Juvenile Justice Referrals

Number of juvenile justice were lower in intervention schools relative to comparison schools, but this difference was not statistically significant ($p = .39$) (See Table 1).

Table 1. *Comparison of Intervention and Comparison School Outcomes for School Year 2*

Count Outcomes: Estimated Marginal Means (Std. Error)	Intervention	Comparison	Wald	<i>p</i>	Exp (B)
Suspensions (all)	38.13 (1.41)	60.05 (1.88)	88.93	.000	1.56
Elementary	10.82 (.92)	15.64 (1.08)	11.24	.001	1.45
Middle	88.90 (5.24)	223.2 (11.74)	93.36	.000	2.51
High	252.0 (19.53)	323.0 (24.86)	3.07	.08	1.28
Office Referrals (all)	108.1 (2.21)	188.8 (2.94)	627.90	.000	1.75
Elementary	23.51 (1.26)	33.17 (1.63)	26.50	.000	1.41
Middle	360.3 (10.22)	734.7 (19.57)	240.2	.000	2.04
High	482.9 (17.53)	959.4 (26.14)	200.5	.000	1.99
Bullying Reports	5.18 (.50)	4.38 (.48)	1.51	.219	.85
Juvenile Justice Referrals*	32.47(3.76)	40.12 (4.88)	.95	.329	1.24
Threat Assessments (School Psychologist)	2.58 (.37)	1.03 (.23)	11.95	.001	.34
Crisis Interventions (School Psychologist)	7.62 (.61)	4.61 (.48)	16.47	.000	.61

Note. For all analyses, general linear models (GLMs) with a Poisson log link function were used, to account for data involving counts. All models controlled for enrollment and baseline number of each outcome. Full parameter tables are available upon request.

*Juvenile Justice Referrals only occurred at the middle and high school levels.

A secondary aim of this study was to evaluate the impact of the EBH-CRP intervention on emotional and behavioral health crisis incidents and service utilization outcomes.

Emotional and Behavioral Health Crisis Incident Report

Schools in both conditions reported on emotional and behavioral health crisis incident type, frequency, response and disposition using the Emotional and Behavioral Health Crisis Incident Report (See Appendix 6—Incident Report) in Intervention Year 1 and Year 2. The EBH Incident Report was developed as part of the study to standardize emotional and behavioral health crisis incident reporting, thus baseline data was not available for this measure.

Independent Samples t-tests were used to compare the frequency and ratio of types of incidents in intervention and comparison schools over Intervention Years 1 and 2. Independent samples t-tests were used to compare the severity of incidents by condition, and the ratio of response type by condition. Difference in number, type and severity of incidents were not significant between intervention and comparison schools. Elementary schools reported the highest rate of incidents, followed by high schools. Disruptive behavior was reported as the most frequently occurring incident, followed by suicidal thoughts/actions and homicidal thoughts/actions. Most incidents were low-level severity (See Appendix 4 for additional results).

With regard to emotional and behavioral health service utilization outcomes, **intervention schools referred students with an emotional and behavioral health crisis incident to mental health supports at a significantly higher rate than comparison schools.** Intervention schools also had a significantly lower rate of students leaving early for the school day (Early School Dismal), when responding to emotional and behavioral health incidents than comparison schools. (See Appendix 7- Incident Report Results).

Threat Assessment and Crisis Response Reports

Secondary data was also collected from existing School Psychologist Year End Cumulative Reports of the number of threat assessments and crisis interventions implemented by the school psychologist for baseline and Intervention years 1 and 2. Students were referred for a threat assessment by the school psychologist if they reported a verbal or written threat of harm to others or school property. Crisis interventions were actions taken by the school psychologist to respond to a student crisis incident.

Because our dependent variables were count data and over-dispersed, Poisson regression models predicting number of threat assessments and crisis interventions were run. We analyzed the difference between the number of each of these outcomes in intervention versus comparison schools in intervention year 2 while controlling for enrollment and number of these outcomes in the year before the intervention (baseline).

There were significantly more threat assessments in intervention schools compared to comparison schools in intervention year 2 while controlling for total enrollment and baseline number of threat assessments (See Table 1). **There were significantly more crisis interventions in intervention schools compared to comparison schools** in intervention year 2 while controlling for total enrollment and baseline number of crisis interventions (See Table 1). These results suggest that schools implementing the EBH-CRP model are more frequently recognizing, assessing and addressing threat of harm to others or school property. These findings, combined with the lower number of suspensions and office referrals, indicate that schools implementing this comprehensive emotional and behavioral health model are more likely to be aware of emotional and behavioral health concerns and are recognizing and addressing them as such and responding with a therapeutic approach as opposed to a disciplinary approach.

An additional secondary aim of this study was to evaluate the impact of the EBH-CRP intervention on stakeholder preparedness and knowledge to address EBH concerns and EBH service quality.

Stakeholders who participated in the various intervention components completed pre, post and follow up measures assessing their preparedness and knowledge to address EBH concerns.

Individual Intervention Outcomes

Safe School Ambassadors

Students who participated in Safe School Ambassadors program (SSA) in school year 2 completed the SSA survey immediately prior to participating in the 2-day SSA training (pre), immediately following the SSA training (post) and at the end of the school year 2 (year end). The SSA surveys included Likert style questions about students' perceptions of their own behavior and the behavior of others in their school with regards to student mistreatment and their preparedness and actions to address student mistreatment. Students also provided qualitative feedback about the SSA training and the impact of the SSA program at their school.

Preparedness and Actions: A repeated measures ANOVA was conducted to examine change in SSA student reported ($N = 389$) preparedness and action to address student mistreatment scores over three time periods, including at pre-test, at post-test (immediately following SSA training), and at the end of the school year. *Mauchly's Test of Sphericity* indicated that the assumption of sphericity was violated, $\chi^2(2) = 7.85$, $p < .05$, and therefore, a Huynh-Feldt correction was used ($\epsilon = .99$). There was a significant effect of time on mean scale score ($F(1.97, 764.54) = 75.27$, $p < .01$). Posthoc analyses with *Bonferroni* corrections revealed **there was a statistically significant increase in mean scale score from pre-test ($M = 3.45$, $SD = .49$) to post-test ($M = 3.73$, $SD = .04$)** as well a significant decrease in mean scale score from post-test to end of school year ($M = 3.50$, $SD = .46$). There was no difference found between the mean scale scores at pre-test and at the end of the year. Further analyses will examine logs of students reported actions to address mistreatment as well as differences between schools based on implementation intensity over the course of Intervention Year 2.

Qualitative Results: Student participants in the SSA training program were asked to report on the biggest change Safe School Ambassadors have caused at their respective school. 95% of students reported that there was a change with 94% reporting a positive change. Several themes emerged in the student comments about the impact of Ambassadors in their schools, ranging from decreases in bullying to increases in prosocial behaviors among both Ambassadors and other (non-Ambassador) students.

The most common change that the Ambassadors noted was a general **decrease in bullying** at their schools. One student attributed the decrease in bullying specifically to Ambassadors quickly responding in situations where there was elevated risk of bullying.

One Ambassador stated, "We changed how many people get bullied. We know all the techniques to help our peers, so we can know what to do and react as fast as possible to show we are leaders to the school and to show them we can be a safe friend to them".

Many Ambassadors further indicated that their presence in their schools also resulted in **fewer problems with specific types of bullying, including physical harassment, put-downs, and name-calling**. A response from one student suggested that their school had a problem with a number of various types of bullying, and the Ambassadors directly resolved these problems.

The student reported, "This school has a lot of fights. We've solved those fights. Also threats. We've solved them. People have been talking inappropriately... Ambassadors have been telling [students] that it is not funny, and it's really inappropriate. So, we stopped that, too."

In addition, one student believed that the impact of Ambassadors on bullying reached beyond the walls of the schools, and into the world of social media.

The Ambassador wrote, "The biggest change is [reducing] gossip on social media... and that we all stop fighting."

Student responses also suggested that their work as Ambassadors in their **schools significantly reduced exclusions, or other students being left out, in their school, which has reduced student perceptions that they are alone**.

One Ambassador noted, "The biggest change that Ambassadors have caused at our school is the decreased amount of exclusion."

This finding is significant, as it suggests that Ambassadors not only impact blatant bullying, like name-calling or physical harassment/hitting, but also subtler forms of mistreatment, like excluding others. Relatedly, several Ambassadors commented that they have helped bullying victims feel better, by talking with them to ensure that they are OK, following an incident.

Ambassadors also believed that **their safety and anti-bullying work in the schools challenged non-ambassadors to promote school safety**.

A student reported, "When we've used our actions other non-ambassadors have watched and followed our actions and have helped bullying."

Relatedly, another student indicated, "We have increased overall awareness of the importance of safety."

A third student stated that the biggest change the Ambassadors had on their school is they have spread the message to act and “to not be scared if u see someone getting bullied, or to tell an adult when u think something bad is going to happen.”

These comments are significant, as they demonstrate the positive influence of Safe School Ambassadors as role models of safety, who empower other students to join in the prevention of bullying.

In addition to decreasing mistreatment at their schools, Ambassadors also believe that they **increased positive social behaviors in their school communities**. Many Ambassadors that their presence was associated with an increase in positive social behaviors, including listening to others, using nice language, etc.

One student noted, “The ambassadors at my school have changed what people say to each other and help students when they need it a lot more than we used to.”

Safe School Ambassadors were also asked to reflect on the biggest change they have noted in themselves since their involvement in program. Overall, they noted that their involvement in SSA **helped them develop their pro-social skills and reduce their acts of unkindness**.

One student commented, “It made me really open, and more understanding, and supportive. Another Ambassador reported, “Ambassadors have been more respectful and they have been a good cause.”

Kognito

School staff who completed the Kognito training completed the Kognito survey immediately prior to the training (pre), immediately following the training (post) and two-months after completing the training (follow-up). The Kognito survey included Likert-style items assessing participant self-reported preparedness, likelihood of, and confidence in engaging in gatekeeper behaviors to approach and refer students who may be experiencing an emotional or behavioral health concern. The Kognito survey also queried participants about their actual self-reported gatekeeper behaviors. Results from school staff who completed the Kognito survey at all three time points are reported below.

Gatekeeper Behaviors

To determine whether participants evidenced changes in their perceived degree of preparedness to help, likelihood to help, and confidence to help students in psychological distress, a series of one-way ANOVAs were run. Because the survey for elementary school staff included more questions, their data were analyzed separately.

Preparedness. Two one-way ANOVAs were run to determine whether participants evidenced changes in their levels of preparedness to intervene over time. **For elementary school staff**, the one-way ANOVA was significant, $F(2,165)=58.05$, $p<.001$. Tukey's B post hoc test revealed that **participants' scores increased significantly from pretest ($M=22.25$) to posttest ($M=31.48$)** but then significantly decreased from posttest to follow-up ($M=28.41$). However, the difference between pretest and follow-up remained significant, indicating that **gains in preparedness were sustained at follow-up**.

For middle and high school staff, the one-way ANOVA was also significant, $F(2, 273) 21.01$, $p<.001$. Tukey's B post hoc test revealed that similarly to elementary school staff, **middle and high school staff's preparedness significantly increased from pre-test ($M=17.49$) to posttest ($M=21.02$)**. However, these **gains were maintained at follow-up**, as evidenced by no significant differences between posttest and follow-up scores ($M=20.04$).

Likelihood. Two one-way ANOVAs were run to determine whether participants evidenced changes in their levels of preparedness to intervene over time. For elementary school staff, the one-way ANOVA was significant, $F(2,159)=11.07$, $p<.001$. Tukey's B post hoc test revealed that **participants' scores increased significantly from pretest ($M=8.70$) to posttest ($M=10.20$)** but then significantly decreased from posttest to follow-up ($M=9.32$). Importantly, and contrary to hypotheses, **the gains in likelihood were lost from post-test to follow up as evidenced by no significant differences between pretest and follow-up scores**.

For middle and high school staff, however, the one-way ANOVA was **not significant**, $F(2, 272) 2.68$, $p=.07$.

Confidence. Finally, two more one-way ANOVAs were run to determine whether participants evidenced changes in their levels of confidence to intervene over time. **For elementary school staff**, the one-way ANOVA was significant, $F(2,165)=17.22$, $p<.001$. Tukey's B post hoc test revealed that participants' scores **increased significantly from pretest ($M=13.54$) to posttest ($M=16.05$)** and were **sustained at follow-up ($M=15.34$)**, as evidenced by no significant difference between posttest and follow-up scores.

For middle and high school staff, the one-way ANOVA was also significant, $F(2, 272) 15.01$, $p<.001$. Tukey's B post hoc test revealed that similarly to elementary school staff, **middle and high school staff's preparedness significantly increased from pre-test ($M=12.00$) to posttest ($M=13.89$)**. These gains were **maintained at follow-up**, as evidenced by no significant differences between posttest and follow-up scores ($M=13.29$).

Gatekeeper Intervention Behavior. Paired samples t-tests were run to determine if there were any changes in participants' gatekeeper intervention behaviors. Because elementary school staff members were asked questions about engagement with students' parents whereas middle and high school staff members were asked about their engagement with students directly, these data were analyzed separately. **For elementary school staff ($N=78-83$), no behavior changes were observed in the number of parents they approached** to discuss their concern about their children, the signs of psychological distress their children were exhibiting, or accessing support services for their child. However, **behavior changes emerged for the number of times participants consulted with a colleague about a student exhibiting signs of psychological distress [$t(78) = 2.90$, $p<.01$] and the number of students participants were concerned about [$t(79) = 3.26$, $p<.01$]**. **Contrary to our hypotheses, participants reported engaging in these behaviors less at follow-up than they did at pre-test**. The pre-test mean number of times participants consulted with a colleague was 3.77, but it dropped to 2.82 at follow-up. The mean number of students that participants reported being concerned about at pre-test was 2.88 and dropped to 2.20 at follow-up. It is possible that the Kognito intervention helped school staff better identify those students that needed gatekeeper intervention and school staff may have been over-identifying students prior to the training, which may explain the decrease in these means.

For middle and high school staff members ($N=88$), no changes were evidenced on the number of students they were concerned about, approached due to their concerns, or referred for counseling.

Usability. Overall, elementary, middle, and high school staff found Kognito to be a useable platform for suicide prevention training. School staff were asked six questions about the usability and utility of the Kognito modules, and they provided ratings on a Likert scale ranging from 1 to 5 with higher scores indicating greater usability. Elementary school staff, on average, rated the usability of the program a 4.08 out of 5. Middle school staff similarly provided an average rating of 4.05 out of 5. High school staff reported an average rating of 3.91 out of 5. When asked to provide an overall course rating on a 5-point Likert scale, elementary school staff rated the program a 3.08 on average, middle school staff gave a rating of 3.07, and high school staff provided a rating of 2.94.

Life Space Crisis Intervention

The Life Space Crisis Intervention (LSCI) survey is a 22-item questionnaire. Staff who completed the LSCI training were asked to complete the pre-test before the training and post-test immediately following training. Staff responded to Likert-type questions (1= Strongly Disagree; 6=Strongly Agree) about their confidence and understanding of crisis-related concepts and skills. The measure includes an 8-item knowledge and preparedness scale which provided a measure of participants' comfort and confidence with their knowledge of and preparedness to use crisis de-escalation skills ($\alpha=.911-.934$).

Participants report a significant improvement in their knowledge of and preparedness to use crisis de-escalation skills after completing the LSCI training ($p < .01$) (See Table 2).

Table 2. LSCI Participants-Crisis De-escalation Skills (Self-Report)

Scale	M	SD	Posttest		n	95% CI for		t	df
			M	SD		Mean	Difference		
Crisis De-escalation Skills	4.143	.885	5.339	.565	88	-1.370, -1.022		-13.652*	87

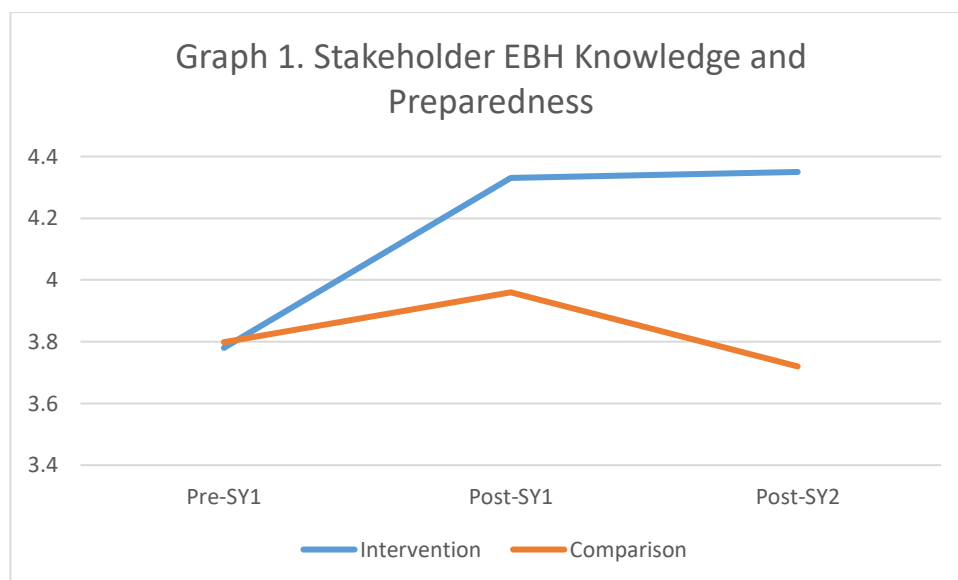
* $p < .01$

Cohen's $d = 1.455$ (adjusted formula for paired samples via G*Power – takes into account the correlation between time points. $r = .427$)

Stakeholder knowledge and preparedness to address EBH concerns across conditions

School staff in intervention and comparison schools completed the Emotional and Behavioral Health Preparedness and Knowledge survey (EBH-PKS) in the fall of school year 1 and the spring of school years 1 and 2. The survey included an 18-item scale querying staff knowledge and preparedness to address student emotional and behavioral health concerns on a 5-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree). The internal consistency for the scale across time points was high ($\alpha=.96-.97$).

A two-way ANOVA was conducted that examined the effect of condition and time on staff knowledge and preparedness to address student emotional and behavioral health concerns. There was a statistically significant interaction between the effects of condition and time on knowledge and preparedness, $F(1, 350) = 17.48, p = .000$. Simple main effects analysis indicated that participants in intervention schools had significantly greater increases in knowledge and preparedness at the end of school year 1 ($p=.000$) and school year 2 ($p=.000$) compared to participants in comparison schools (See Graph 1).



An additional secondary aim of this study was a cost-benefit analysis to assess the net benefits (i.e. dollar benefits minus costs) of the EBH-CRP intervention during the project period.

The purpose of the cost analysis is to provide estimates of the overall and component resource costs attributable to the EBH-CRP Intervention. Information on costs came primarily from project tracking forms and from BCPS administrative sources. Other sources for relevant data points included the U.S. Bureau of Labor Statistics (i.e., salaries), the Consumer Price Index (i.e., inflation), and Maryland state government policy documents. The estimated total cost includes the budgetary costs (i.e., the money spent) as well as the value of the time spent by teachers, administrators, and emotional-behavioral health staff in training and in other intervention related activities. The budgetary costs are also sometimes called “direct costs” whereas the value of time spent is categorized as “indirect costs.” Indirect costs are measured by multiplying time spent in an activity by a labor cost per unit of time. The labor cost estimate includes wages plus fringe benefits and employer payroll tax.

The purpose of the school outcome (or benefits) analysis is to provide estimates of the overall costs averted and/or net savings achieved under the intervention condition compared with the comparison group schools that lacked the training and services intervention components. School outcomes included in the benefit analysis were total school days missed, office referrals and suspension days. Information on school outcomes (e.g., suspension days) came from BCPS administrative sources. Other external reference sources and project records were used to find relevant shadow prices for school outcomes (e.g., cost per day suspended). U.S. Bureau of Labor Statistics data was used to estimate salaries. The Consumer Price Index was used to adjust for annual general price inflation, and Maryland state government policy documents were used to obtain spending levels for some school services. The estimated total cost of an adverse school outcome includes the budgetary costs (i.e., the money spent) as well as the value of the added time spent by teachers, administrators, and emotional-behavioral health staff as a result of the student’s decisions or outcomes. Averted costs are equivalent to gross savings, or simply savings. Net savings (or net costs if negative) represent the difference of savings – costs.

The Emotional and Behavioral Health Crisis Response and Prevention Intervention (EBH-CRP) required an overall investment of \$699,752 in school year 2015 and \$429,961 in school year 2016 (\$1,429,713 over both years). Most of these expenses (\$491,161 in school year 2015 and \$389,135 in school year 2016) were for direct purchases while the remainder was attributable to time spent by individuals in intervention-related training and workflow processes. The intervention resulted in a gross savings of \$709,300 over the first two years, and in a net savings of -\$720,413 over the first two years (i.e., in a net cost). **One way to interpret these results is that approximately half of the \$1.4 million dollar cost of the intervention was offset by indirect savings due to increased student attendance at school (or reduced suspension days) and by fewer office referrals.**

We can speculate that, as a result of greater school attendance, **students will experience gains in achievement that are not measured in this study. As a result, our estimate of benefits is likely an underestimate of the long-term gains resulting from the Emotional and Behavioral Health Crisis Response and Prevention Intervention (EBH-CRP).** (Additional details about the cost-benefit analysis can be found in Appendix 8.)

Implications for criminal justice policy and practice

The results of the randomized controlled trial of the Emotional and Behavioral Health Crisis Response and Prevention (EBH-CRP) intervention has numerous implications for the understanding of the school safety problem both in Baltimore County and the larger United States, especially as it relates to emotional and behavioral issues. Currently, many schools are struggling to formulate and implement programs that will enhance various aspects of school safety. Unfortunately, however, many of these programs are ad hoc in nature and not based on scientific evidence or systematic research protocols. Results from the current trial provide important implications for addressing emotional and behavioral health concerns to promote school safety.

Primary outcomes

- ❖ **Schools implementing the EBH-CRP model have less suspensions and office referrals in intervention year 2 while controlling for enrollment and number of these outcomes in the year before the intervention.**
 - Results from this study indicate that the combination of interventions in the EBH-CRP model are resulting in schools using less discipline mechanisms with students. Suspensions and office referrals are timely and costly to school systems (Rumberger & Losen, 2016) and are related to deleterious outcomes for students including poor academic performance, school dropout, and delinquency (Noltemeyer, Ward, & Mccloughlin, 2015).
- ❖ **Schools implementing the EBH-CRP model are more frequently recognizing, assessing and addressing emotional and behavioral health crises.**
 - These findings, combined with the lower number of suspensions and office referrals, indicate that schools implementing this comprehensive emotional and behavioral health model are more likely to be aware of emotional and behavioral health concerns and are recognizing and addressing them as such and responding with a therapeutic approach as opposed to a disciplinary approach.
- ❖ **EBH-CRP cost savings: Over half of the intervention cost was off-set by savings due to less suspensions, office referrals and greater attendance in intervention schools.**
 - There is a significant cost for the initial implementation of the EBH-CRP model and these types of initial implementation costs for emotional and behavioral health interventions are often barriers for school systems to implement these interventions. The results of the cost-benefit analysis of this trial are critical in highlighting the cost savings resulting from the intervention and beneficial for school systems to make the case to dedicate resources to these interventions.
- ❖ **Stakeholders in schools implementing the EBH-CRP model report feeling more prepared to address emotional and behavioral health concerns across the continuum than stakeholders in comparison schools.**

- ❖ **This trial provides a wealth of additional information about the evidence-informed interventions of Life Space Crisis Intervention, Kognito and Safe School Ambassadors.**
 - Future analyses and forthcoming manuscripts will provide additional details about the results of each of these interventions and the differential impact of each of these interventions as they relate to the EBH-CRP model as a whole.
- ❖ **This study produced a number of new resources and tools to support schools and districts in their work to address emotional and behavioral health crises. Two highlighted resources include:**
 - **Emotional and Behavioral Health Incident Report** -This one-page tool provides a streamlined, standardized way for schools to document emotional and behavioral health incident type, frequency, response and disposition.
 - **Process for Crisis Assessment and Relapse Prevention (P-CARP)**- This tool is designed to help school emotional and behavioral health teams to evaluate why a particular Emotional and Behavioral Health Crisis Incident occurred and to plan what post-crisis response should be enacted to help prevent a similar crisis from re-occurring with this student. The P-CARP also documents team activities in response to the crisis, both during the incident itself to de-escalate the situation, and in the weeks following to prevent recurrence.
- ❖ **This trial highlights the importance of addressing emotional and behavioral health concerns across the continuum of emotional and behavioral health promotion, prevention and intervention using a multi-tiered system of student emotional and behavioral health supports (MTSS).**

Limitations

Limitations and considerations for future studies and analyses are discussed below.

- ❖ Implementation of different components of the model varied across intervention schools. Data revealed that there was variability in the number of stakeholders trained and the intensity of implementation across model components (e.g. some schools had more educators trained in LSCI, conducted more SSA sessions). Further analyses will evaluate the impact of implementation on outcomes.
- ❖ Completion of research measures varied across measures, the availability of secondary school system data varied by school, and some data was not available for the baseline school year. Multiple departments and divisions across the school district collaborated with the research and evaluation team to collect data and identify and share existing school system data but, given the real-world implementation of this trial, there were some constraints on data availability.
- ❖ This study focused on a comprehensive approach to addressing student emotional and behavioral health that resulted in significant findings supporting the impact of the overall model

on school safety and discipline and stakeholder capacity to address emotional and behavioral health concerns. While data from this study provides information about the acceptability and utility of individual model components, a limitation of this trial is the understanding of the differential impact of individual model components. Further analyses from this trial will continue to look at individual component implementation and the relationship to study results.

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Appendices

Appendix 1- EBH-CRP Intervention Description Safe School Ambassadors p 26

Appendix 2- EBH-CRP Intervention Description Kognito p 27

Appendix 3-School Resource Map p 28-31

Appendix 4- EBH-CRP Intervention Description Life Space Crisis Intervention p 32

Appendix 5- P-CARP p 33-38

Appendix 6- EBH Incident Report p 39

Appendix 7- EBH Incident Report Results p 40-44

Appendix 8- EBH-CRP Cost-Benefit Analysis Report p 45-53

Appendix 1

SAFE SCHOOL AMBASSADORS PROGRAM

"Taking an Inside- Out Approach. Strengthening Relationships and Changing the Social Norms so Bullying Does not occur". Community Matters

Program Description: The Safe School Ambassadors (SSA) Program is included in SAMHSA's National Registry of Evidence-Based Programs and Practices. The Safe School Ambassadors program engages the socially influential leader of a school's diverse cliques and equips them with effective non-violent communication and intervention skills they can use with their peers to prevent, stop, and report bullying, cyber-bullying, and harassment.

DELIVERY MODEL

- Empowering young people by empowering them in real problem solving, decision making and implementing solutions.
- Utilizing restorative practices such as circles, affective questions and statements, and conferencing.
- Helping students learn from their mistakes and make amends to those they've wronged.

WHAT WILL THE PROGRAM DO?

SSA will reduce bullying and school violence and improve school climate for students in elementary through high school and lead to improved relationships, reduced disciplinary incidents, and safer schools. Teams of SSA will be formed and students will be engaged, equipped, and empowered to be peacemakers.

WHAT DOES THE RESEARCH SAY?

The program is based on the most current research in violence prevention and positive youth development and shows to be effective in reducing cruelty and violence and improving campus climates which improves academic performance, staff morale, and already tight school budgets. Research has shown several statistically significant outcomes including 33% lower suspension rates than pre-SSA rates.

STUDENT CENTERED

How are Students Identified? Students will not wear badges, uniforms, or external markings to be identified as SSA. Rather, students will travel in their ordinary circles with increased awareness, courage, and skills.

How participants are chosen? Students from diverse groups across campuses are identified by their peers, faculty and staff members, or through self-nomination. Ambassadors will include representation of the diverse ages, abilities, and interests of students on the campus.

Safe School Ambassadors are trained to **NOTICE**:

- Exclusions
- Put downs
- Bullying
- Unwanted Physical contact
- Acts against campus

Appendix 2

KOGNITO

"Everywhere-at home or work; in physician's offices, hospitals, clinics and pharmacies; in schools and universities-people and professionals are engaged in challenging health and wellness conversations."

Program Description: Kognito learning experiences address chronic disease, PTSD, behavioral health, suicide prevention, substance abuse, screening, and brief intervention and social change among other things. Clients of Kognito include more than 450 organizations in 43 states representing a growing list of state and local health agencies, divisions of Veterans Affairs and the Departments of Defense, American Academy of Pediatrics, NAMI, universities and schools, hospitals, and NGOs.

The program is based on the most current research in violence prevention and positive youth development

DELIVERY MODEL

- On-line simulations of real life situations.
- Practice and role-play real life situations by communicating with virtual humans thereby building their skills in motivational interviewing and other evidence-based communication techniques.

WHAT IS THE PURPOSE OF THE TRAINING?

Kognito drives positive change in health behaviors through the use of immersive learning experiences with virtual humans. Each conversation experience simulates the interactions and behaviors of practicing health professionals, patients, caregivers, students, and educators in real-life situations.

WHAT WILL THE PROGRAM DO?

- Users move through realistic scenarios at an individual pace. They practice and role-play real life situations by communicating with virtual humans thereby building their skills in motivational interviewing and other evidence-based communication techniques.
- Provide learning experiences address chronic diseases, PTSD, behavioral health, suicide prevention, and substance abuse concerns.
- Teach screening and brief intervention skills as well as ways to affect social change.

Why is it important to our school climate?

Learn how to support a student or youth struggling with psychological distress, thoughts of suicide, or alcohol and other drug use.

The only company with digital simulations listed in the National Registry of Evidence-based Programs and Practices (NREPP). Multiple empirical studies have shown that Kognito's simulations result in statistically significant and sustainable changes in skills, attitudes, and behaviors.

Appendix 3



PROMOTING SCHOOL SAFETY GRANT: EMOTIONAL AND BEHAVIORAL HEALTH CRISIS RESPONSE AND PREVENTION

School Resource Mapping

School Name: _____

Key Staff	FTE	Name/ Contact
Principal		
Assistant Principal		
Assistant Principal		
Assistant Principal		
School Counselor		
School Psychologist		
Pupil Personnel Worker		
School Social Worker		
Student Resource Officer		
Behavior Interventionist		
Community Partners		
Community Partners		

Student Support Team

Who chairs your SST (name/title/contact)?

How frequently do you meet, and what is the team process for referral /on-going support?

Appendix 3

SST Members (name and title)

Behavioral Health/Mental Health Services

Does BCPS Mental Health professional (SSW/Psychologist/ etc.) provide on-going therapy to students? Yes/ No (circle)
If so, how is this referral determined? How are referrals handled to in school mental health and who qualifies for a referral?

What type of services are provided in school (individual therapy/group/ family support, case management)? By who? How often?

Community Mental Health Partners

Do you have community Mental Health Services In School? Yes/No (circle)
If Yes: Who provides services?

How do you refer to Community Partners?

Appendix 3

School Climate and Concerns for Emotional and Behavioral Health: Identify areas of concern for Emotional and Behavioral Health in your school. Issues or concerns that are specific to your school climate

- | | |
|---|---|
| <input type="checkbox"/> Peer Aggression | <input type="checkbox"/> Failure to obey school rules |
| <input type="checkbox"/> Classroom Disruption | <input type="checkbox"/> Other: |
| <input type="checkbox"/> Threats against Students | _____ |
| <input type="checkbox"/> Threats against Staff | _____ |
| <input type="checkbox"/> Substance Use/ Abuse | _____ |
| <input type="checkbox"/> Verbal Aggression towards Staff | |
| <input type="checkbox"/> Suicidal Ideations | |
| <input type="checkbox"/> Homicidal Ideations | |
| <input type="checkbox"/> Theft/ Animal Cruelty/ Fire Setting | |
| <input type="checkbox"/> Excess number of students who monopolized staff / administrator time | |
| <input type="checkbox"/> Students bringing weapons to school | |
| <input type="checkbox"/> Bullying | |
| <input type="checkbox"/> Attendance | |
| <input type="checkbox"/> Insubordination | |

Appendix 3

Have you had to call the Baltimore County Mobile Crisis Team for a student in the past?

Tell us about that experience

What behavioral Concerns do you have in the school?

What behavioral Interventions do you have in place?

What is the most significant reason for office referral's or suspensions that you face in your school?
--

Appendix 4

LIFE SPACE CRISIS INTERVENTION

"LSCI believes that the purpose of helping involves having the ability to listen deeply to the personal stories of children and youth and to recognize that their message often is not in their words but in their underlying thoughts and feelings."

Program Description: Life Space Crisis Intervention

Institute (LSCI) teaches professionals the therapeutic talking strategies needed to help students during stressful moments as well as the awareness and skills to understand and manage their own feelings and counter aggressive tendencies when intervening with aggressive or out of control behaviors. The real strength of the LSCI program is its emphasis on teaching and practicing specific interviewing techniques to help staff and students debrief a problem situation or critical incident.

What is the purpose of this training?

LSCI provides skills for special educators, counselors, psychologists, juvenile justice staff, child care workers, and others who work with troubled children and youth to enable them to prevent and resolve

WHAT WILL THE PROGRAM DO?

LSCI provides specific strategies for working with children and youth who experience:

- Self-abusive tendencies
- Escalated incidents of power struggles
- Distorted reality/Perception
- Little conscience for aggressive behavior
- Social skills deficits

Develops trust between staff and the student. Educating staff on how to best mediate between the student in stress, the student's behavior, the reactions of others, and the private world of feelings that students are sometimes unable to handle without help.

What will I learn?

What to do when a child or youth acts out with unsuspecting helpers.

How to help a child or youth who has the right intentions and motivations but lacks the social skills to be successful.

DELIVERY MODEL

- Interactive Therapeutic Strategies to turn crises into learning opportunities
- How to respond to the crisis cycle
- Talking with students in conflict
- Real life examples

crises to build good relationships with challenging youth to help them learn and change repetitive patterns of self-defeating behaviors.

Children and Youth are:

- Valued and treated with respect
- Learning to trust caring adults and use them for support
- Acquiring strength-based social skills
- Accepting responsibility for inappropriate actions.

Nationally recognized professional training and certification program.

Appendix 5

Page 1 of 9

Process for Crisis Assessment and Relapse Prevention (P-CARP)

Introduction

This tool is designed to help the Crisis Facilitator evaluate why a particular Emotional and Behavioral Health Crisis Incident occurred (Section I) and to plan what post-crisis response should be enacted to help prevent a similar crisis from re-occurring with this student (Sections II and III). The CARPP will also be used to document the Crisis Facilitator's activities in response to the crisis (Section IV), both during the incident itself to de-escalate the situation, and in the weeks following to prevent recurrence. Because they build upon one another, sections of the CARRP should generally be completed in order (i.e., a Crisis Incident Assessment should be completed before the Closing Narrative).

CARPP Sections Guidelines

I. Emotional and Behavioral Health Crisis Incident Assessment (CIA)

This tool provides a functional assessment of why the Crisis Facilitator believes the crisis occurred, incorporating perspectives from the student, school staff, peers (when appropriate), parents/other family members, and the situational context.

Complete this section within 1 week of the incident when:

- a. A Level II or III crisis occurred and the Crisis Facilitator provided an immediate crisis response (i.e., was directly involved in de-escalating the crisis), **OR**
- b. In other situations as warranted. The CIA can be completed for situations other than the above when it would be helpful to the student or school to do so in a particular case (e.g., a higher-level crisis in which the facilitator was **not** directly involved, for a lower-level crisis for a student with many unmet needs).

II. Needs Assessment

This tool helps determine the intensity and the duration of the post-crisis response that will be enacted by the Crisis Facilitator, based on the needs of the student and his/her systemic context.

Completed whenever a CIA (Section I) is completed and within 1 week of the crisis incident.

III. Post-Crisis Response Plan

Here the Crisis Facilitator outlines the actions s/he intends to take to help prevent a similar crisis from re-occurring with this student. Actions that will be taken by school personnel and family members can be listed here as well. This section is analogous to a "treatment plan" in a therapy setting.

Completed whenever a CIA is completed, within 1 week of the crisis incident.

IV. Crisis Incident and Post-Crisis Response Closing Narrative

This section documents the actions actually taken by the Crisis Facilitator during the crisis incident itself (if s/he was directly involved) and in the post-crisis response period (i.e., in the 30 to 60 days following the incident). The Facilitator should also share his/her sense of whether post-crisis interventions were effective and make any final recommendations to help prevent the student from having a crisis relapse. This section is analogous to a "discharge summary" in a therapy setting.

Completed:

- *For Incidents with a Low Needs Assessment Score - within 30 days of the crisis incident*
- *For Incidents with a High Needs Assessment Score - within 60 days of the crisis incident*

Recommended citation: Schaeffer, C., Bohnenkamp, J., Hoover, S., Kozlowski, M., Freshour, C., Nguyen, C. & Lewis, A. (2018). Process for Crisis Assessment and Relapse Prevention. National Center for School Mental Health, Baltimore, MD. www.schoolmentalhealth.org

Appendix 5

Page 3 of 9

Section I. Emotional and Behavioral Health Crisis Incident Assessment (CIA)

INSTRUCTIONS: The CIA will be completed within **1 week** of every BCPS Level II or III crisis incident **in which the Crisis Facilitator was directly involved**. The CIA **can** also be completed for other students (e.g., Level II or III crises for which the Facilitator was NOT involved, students with multiple Level I crises, etc.) as warranted.

Student:	Date and Time of Crisis:
School and Grade:	Crisis Location:
Date of CIA Completion:	Did Crisis Facilitator provide Crisis Response Activities during this crisis? Yes No
Brief description of crisis (OR - if this CIA is NOT related to a crisis, explain here why it is being completed):	

A. Relevant Background / Contextual Information List any student background or contextual factors that may have contributed to this crisis incident – e.g., stressor in student's life, mental health diagnosis, has an IEP, etc.

Individual Student Factors	School / Neighborhood Factors
•	•
Family Factors	Peer Factors
•	•

A. Antecedents (Timeline) to the Crisis List the events immediately leading up to (same day as) the crisis incident from both the student's and school personnel's perspectives.

Student Perspective	School Personnel's Perspective
•	•

B. Behaviors Exhibited in Crisis

--

C. Narrative Summary / Conflict Cycle Using the information outlined above and your clinical judgment, provide a brief narrative outlining **why** you think this crisis occurred and anything learned from the crisis itself.

--

Recommended citation: Schaeffer, C., Bohnenkamp, J., Hoover, S., Kozlowski, M., Freshour, C., Nguyen, C. & Lewis, A. (2018). Process for Crisis Assessment and Relapse Prevention. National Center for School Mental Health, Baltimore, MD. www.schoolmentalhealth.org

Appendix 5

Page 4 of 9

D. Hypothesized Function(s) / Cause(s) of Crisis Incident

Function(s) – why did the student display this behavior? LIST
•
Other causal / contributing factors - LIST
•

E. Student and System Strengths / Assets

Individual Student Strengths	School / Neighborhood Strengths
•	•
Family Strengths	Peer Strengths
•	•

F. Services / Supports

Student Services / Supports Already in Place when Crisis Occurred – LIST
•
Services / Supports Provided in Immediate Response to the Crisis (e.g., psychiatric hospitalization for stabilization) – LIST
•

Recommended citation: Schaeffer, C., Bohnenkamp, J., Hoover, S., Kozlowski, M., Freshour, C., Nguyen, C. & Lewis, A. (2018). Process for Crisis Assessment and Relapse Prevention. National Center for School Mental Health, Baltimore, MD. www.schoolmentalhealth.org

Appendix 5

Page 5 of 9

Section II. Needs Assessment

A. Rate the crisis incident on the following dimensions (see Guidelines for the Post-Crisis Response):

Student Current Behavioral Health Needs		
0 Low Need Mild oppositional behavior or distress that is not indicative of a broader mental health or behavioral issue, OR student has a more serious mental health concern that is being managed by current resources	1 Moderate Need Student has some need for emotional, behavioral, mental health, or substance abuse resources	2 High Need Student has serious emotional, behavioral, mental health or substance abuse issues and a high need for more or different services
Characteristics of the Crisis Incident		
0 Minor Incident Very little risk of injury/property damage; threat vague and undefined	1 Moderate Incident Some risk of injury/property damage; threat somewhat articulated/targeted	2 Severe Incident Incident did or could have resulted in serious injury/property damage; threat clearly articulated / clear target
Risk for Subsequent Crises		
0 Low Risk Crisis appears to be an isolated incident	1 Moderate Risk Student shows some signs of a pattern of this type of crisis behavior	2 High Risk Student has had multiple similar incidents
School Needs		
0 Low Need School is fully capable of meeting this student's post-crisis needs	1 Moderate Need School needs some additional support to meet this student's need	2 High Need School lacks resources or ability to provide necessary post-crisis services and supports to this student
Family Needs and Preferences		
0 Low need Family has adequate supports in place	1 Moderate Need Family has few supports	2 High Need Family has no supports or there are other extenuating circumstances

B. TOTAL Needs Assessment Score (tally ratings above): _____

0 – 4: Engage in Menu A *time-limited* interventions only (for up to 30 days post-crisis)

5+: Engage in Menu A AND Menu B *more intensive* interventions (for up to 60 days post-crisis)

Recommended citation: Schaeffer, C., Bohnenkamp, J., Hoover, S., Kozlowski, M., Freshour, C., Nguyen, C. & Lewis, A. (2018). Process for Crisis Assessment and Relapse Prevention. National Center for School Mental Health, Baltimore, MD. www.schoolmentalhealth.org

Appendix 5

Page 6 of 9

Section III. Post - Crisis Response Intervention Plan

Menu A Activities – if selected, complete by _____ (date)(30 days post-incident)
Select all that are planned and provide details for each.

- ☐ **School staff support:** Follow-up with school staff to provide support or debriefing and provide resources.

Describe plan:

- ☐ **Parent consultation:** Make supports and services recommendations.

Describe plan:

- ☐ **Parent consultation:** Follow-up on referrals / recommendations.

Describe plan:

- ☐ **Attend Student Support Team and other school team meetings** pertaining to the student / incident.

Describe plan:

- ☐ **Resource follow-up and linkage, with resource itself.**

Describe plan:

- ☐ **Conduct classroom observation.**

Describe plan:

- ☐ **Identify school personnel who will follow-up on care coordination recommendations**

Lead School Personnel: _____

Menu B Activities (for higher need scores only) – if selected, complete by _____ (date)(60 days post-incident)
Select all that apply and provide plan details for each.

- ☐ **Care coordination interventions.**

Describe plan:

- ☐ **Family feedback and planning session** (review Crisis Incident Assessment with family members).

Describe plan:

- ☐ **Obtain parental releases of information and distribute CIA to relevant parties.**

CIA to be shared with:

- ☐ **Wraparound support services.**

Describe plan:

- ☐ **Identify school personnel who will follow-up on care coordination recommendations**

Lead School Personnel: _____

Recommended citation: Schaeffer, C., Bohnenkamp, J., Hoover, S., Kozlowski, M., Freshour, C., Nguyen, C. & Lewis, A. (2018). Process for Crisis Assessment and Relapse Prevention. National Center for School Mental Health, Baltimore, MD. www.schoolmentalhealth.org

Appendix 5

Page 7 of 9

Section III. Post - Crisis Response Intervention Plan continued

<input type="checkbox"/> <i>No Menu A or Menu B activities are required or are possible for this student.</i>
<i>Explain and/or provide rationale:</i>

Crisis Facilitator Signature

Date Plan
Created

Date Plan Discussed / Finalized with
Supervisor

Recommended citation: Schaeffer, C., Bohnenkamp, J., Hoover, S., Kozlowski, M., Freshour, C., Nguyen, C. & Lewis, A. (2018). Process for Crisis Assessment and Relapse Prevention. National Center for School Mental Health, Baltimore, MD. www.schoolmentalhealth.org

Developed by the National Center for School Mental Health in partnership with Baltimore County Public Schools- www.schoolmentalhealth.org

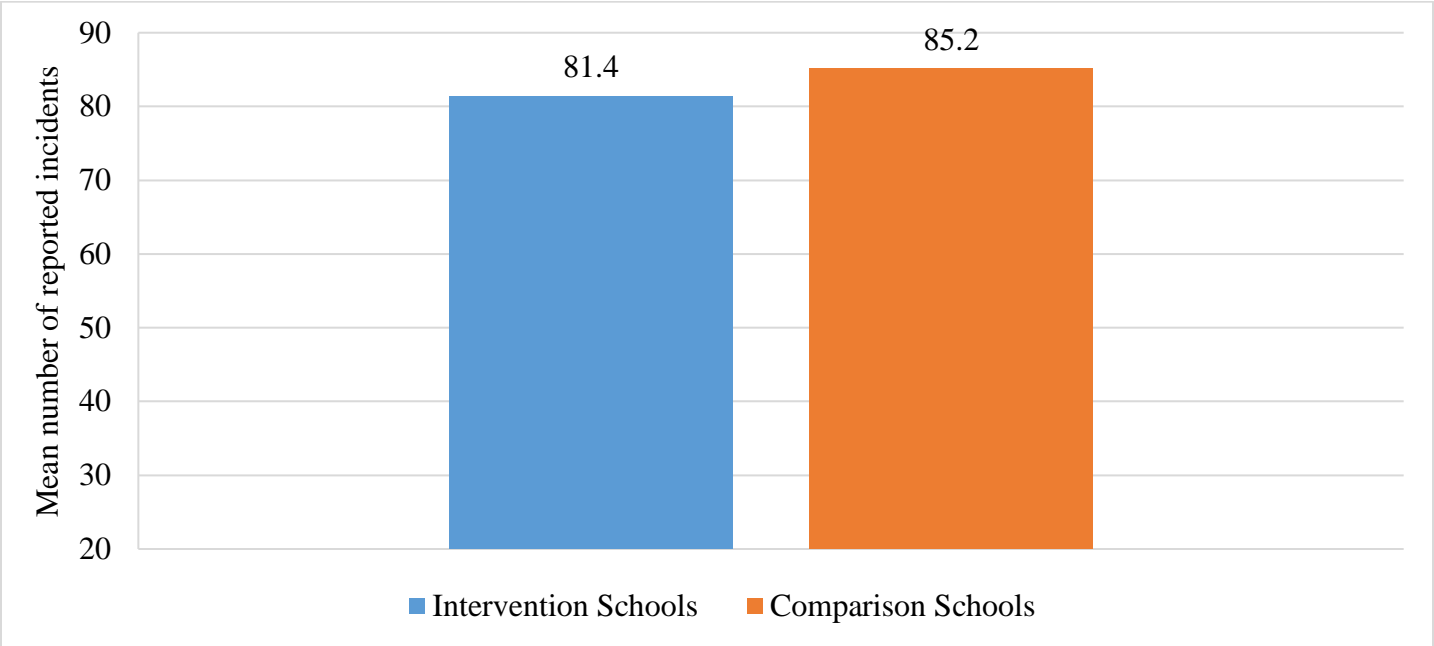
Appendix 7

EBH-CRP

Emotional and Behavioral Health Incident Report Graphs and Tables

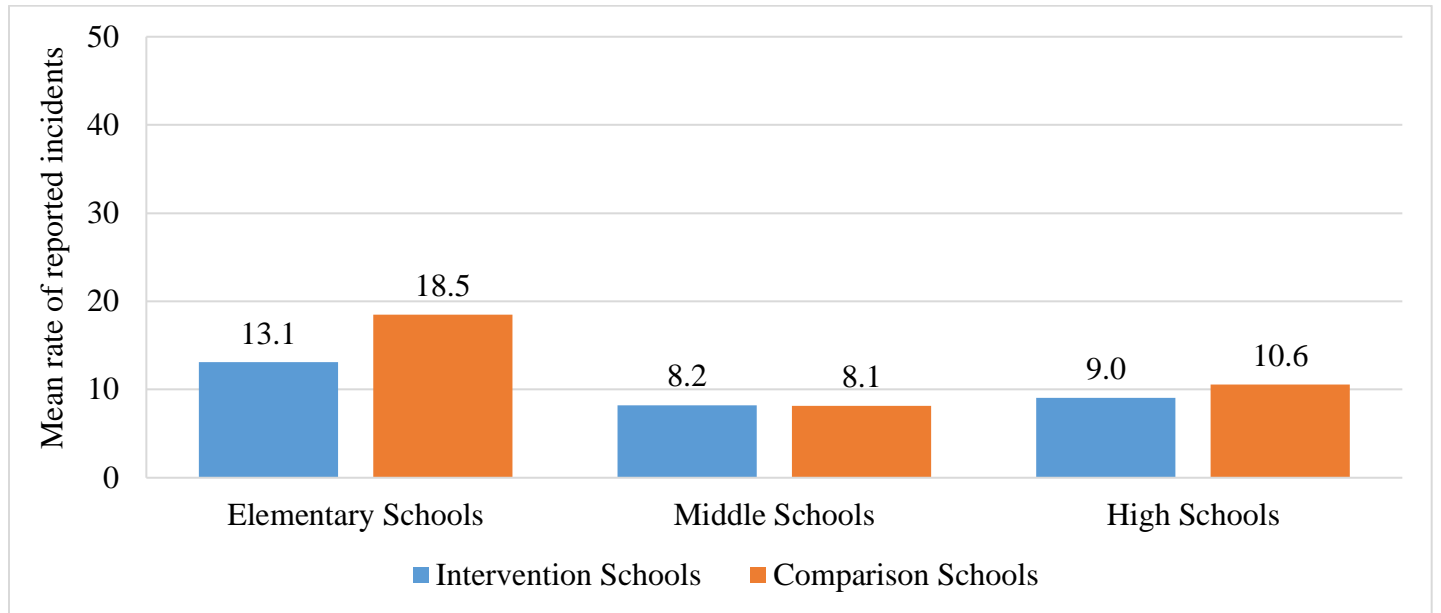
(all graphs and tables include incident report data over the entire study period (SY1 and SY2))

Mean number of reported incidents by condition



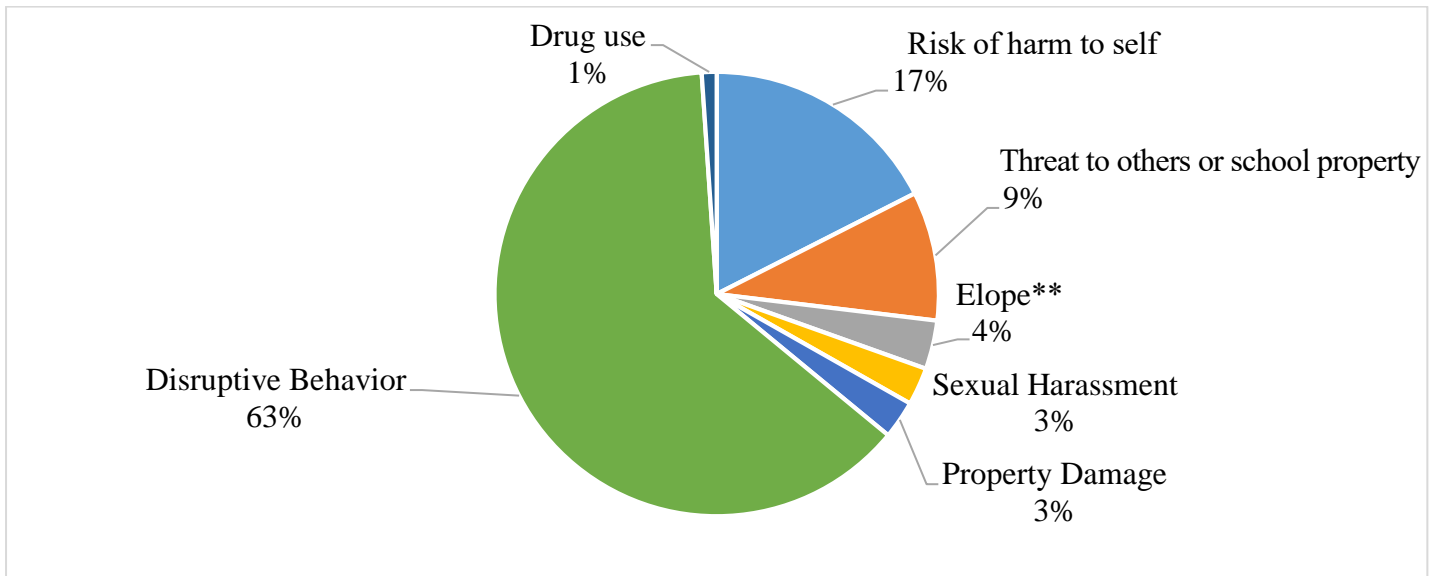
Appendix 7

Mean rate of reported incidents by school level by condition

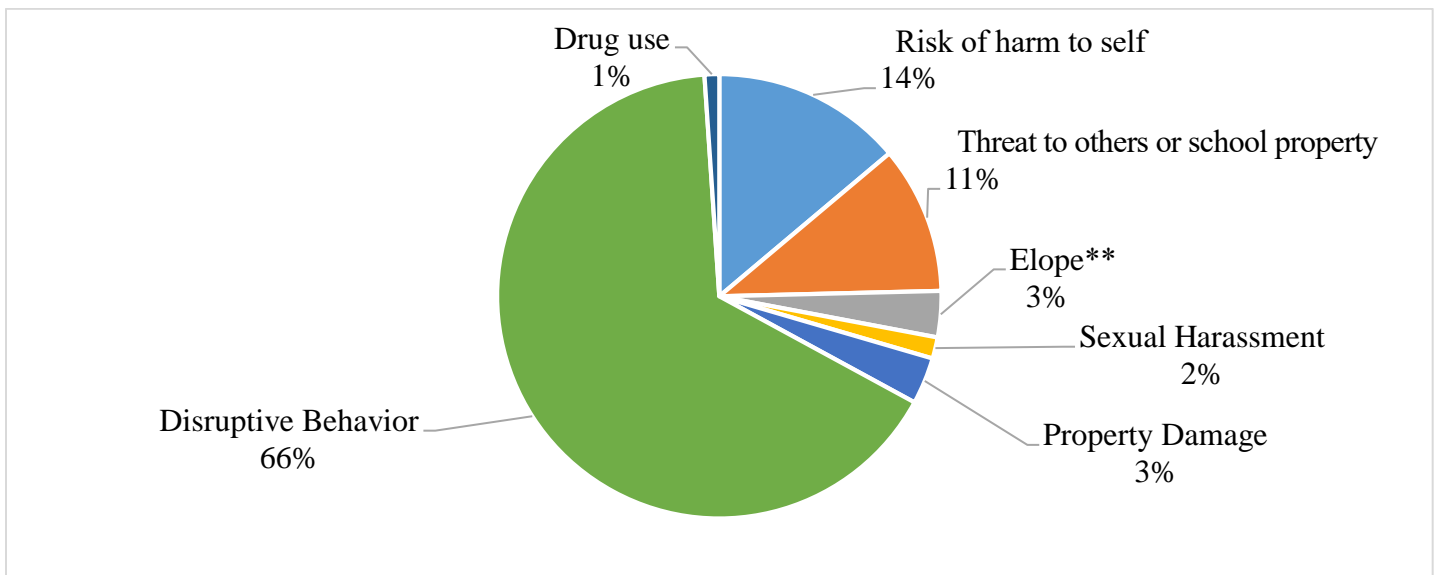


Appendix 7

Type of incidents⁺ in intervention schools



Type of incidents⁺ in comparison schools

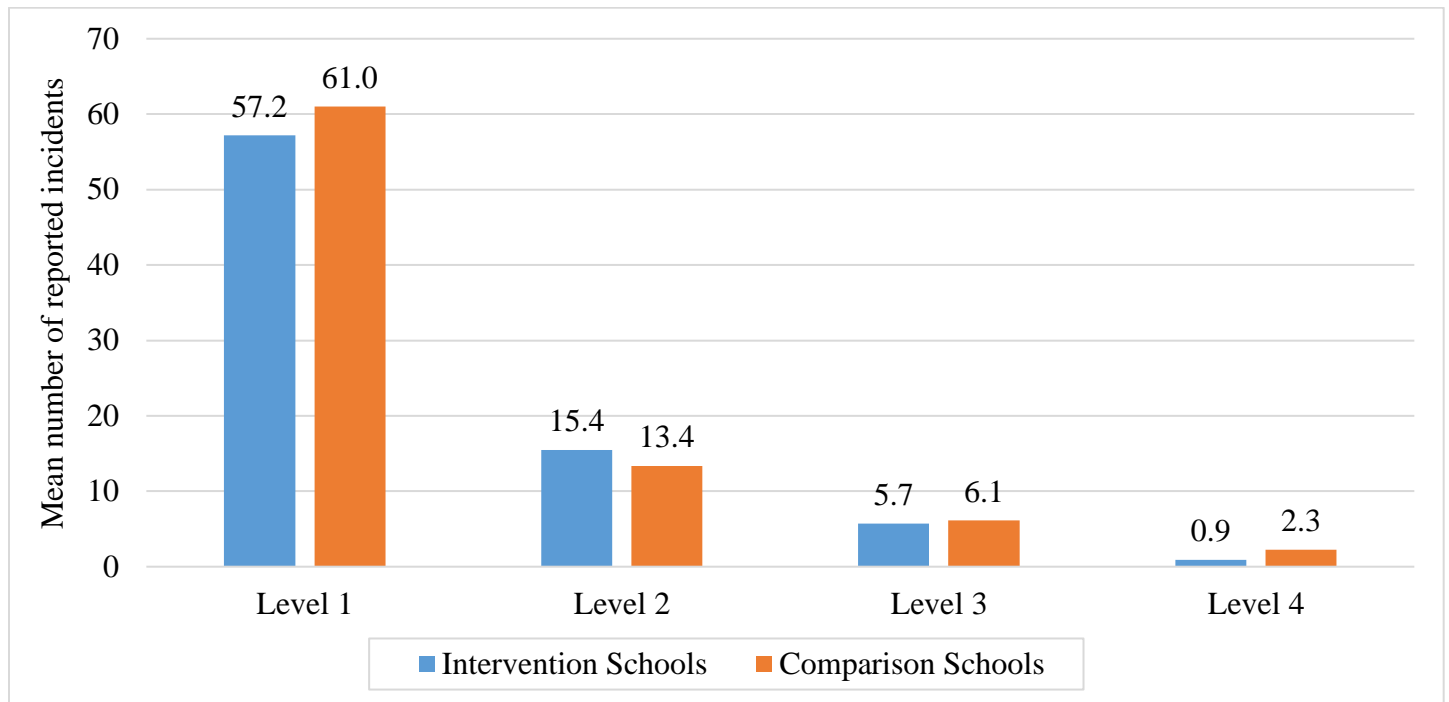


⁺staff may indicate more than 1 type of incident per report

*^{**} Elope refers to a student leaving school property without permission (typically involves risk to safety due to lack of supervision and is coded in elementary and middle schools)*

Appendix 7

Severity of reported incidents by condition

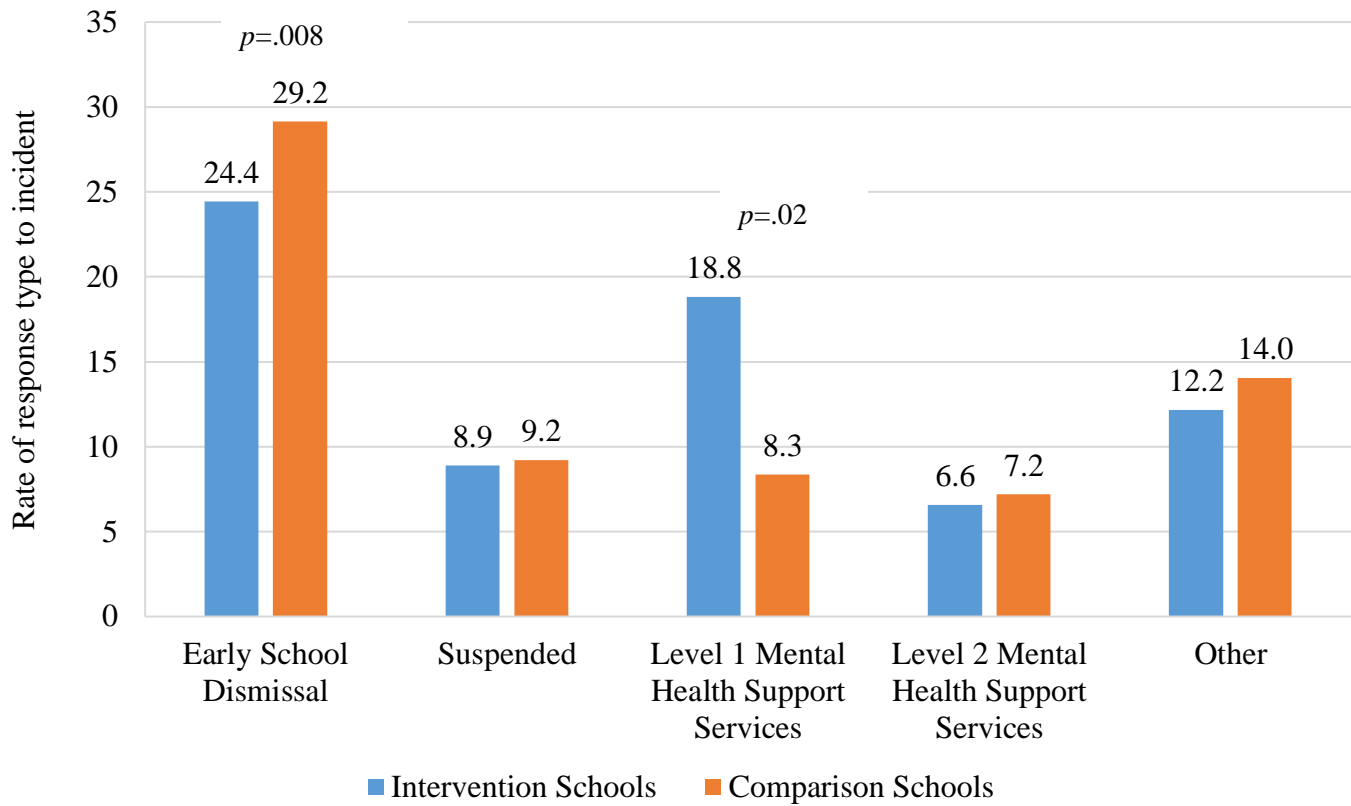


Coding severity level in incident reports

Level	Descriptor
1	General disruptive behavior
2	Expressed or implied an intent to harm self, others or property
3	Attempted to or engaged in act to harm self, others or property
4	Engaged in serious harm to self, others or property

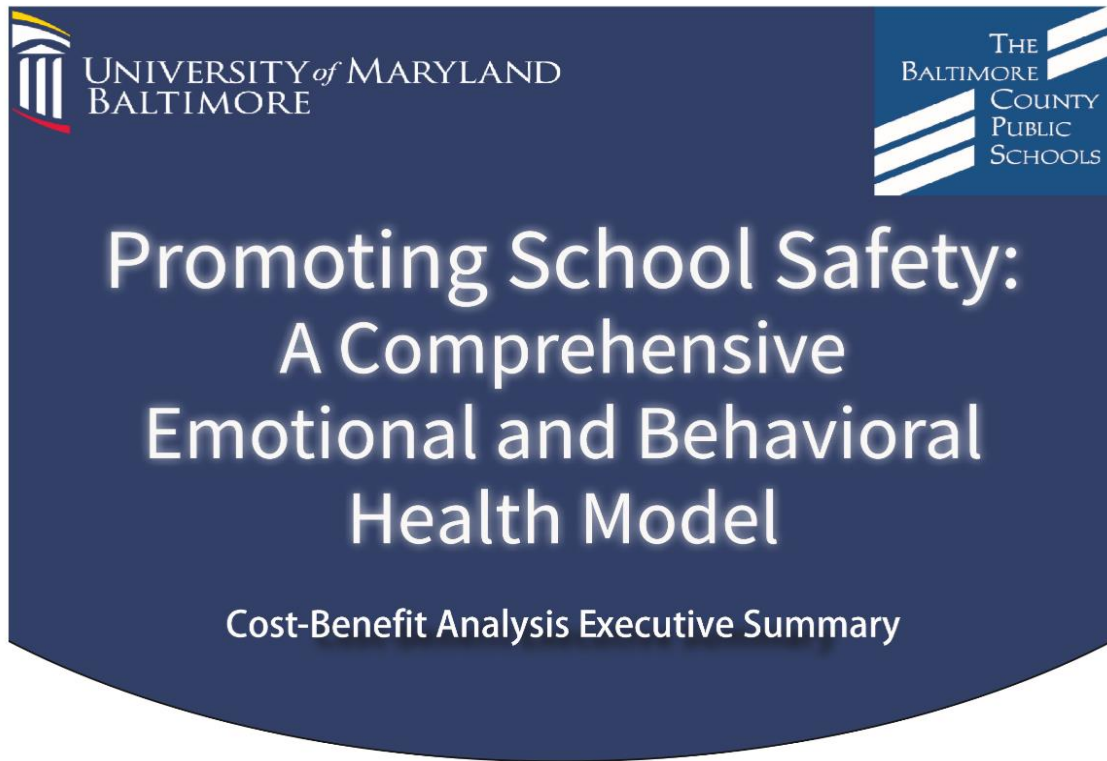
Appendix 7

Rate of school response type to incident by condition⁺



⁺staff may indicate more than 1 response type per incident report

Appendix 8



Eric Slade, Ph.D, Jill Bohnenkamp, Ph.D, Sharon Hoover, Ph.D & Cindy Schaeffer, Ph.D



Appendix 8

Funding & Project Leadership

The Promoting School Safety: A Comprehensive Emotional and Behavioral Model is a randomized control trial of the impact of the Comprehensive Emotional and Behavioral Health Crisis Response and Prevention Intervention (EBH-CRP) on school safety. Baltimore County Public Schools, in partnership with the National Center for School Mental Health, was awarded funding for this initiative by the National Institute of Justice as part of the Comprehensive School Safety Initiative.

Baltimore County Public Schools

April K. Lewis, MEd.....Principal Investigator
Cindy Nguyen, MSW, LCSW-C.....Project Coordinator

Steering Committee

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Debbie Somerville, RN, MPH.....Coordinator of Health Services
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Jill H. Bohnenkamp, PhD.....Co-Principal Investigator
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Eric Slade, PhD.....Co-Investigator

Funding Source

Department of Justice
Office of Justice Programs (OJP)
National Institute of Justice (NIJ)
Comprehensive School Safety Initiative - Developing Knowledge About What Works to Make Schools Safe

Grant #2014-CK-BX-0021

Appendix 8

Emotional and Behavioral Health Crisis Response & Prevention Model (EBH-CRP)

A comprehensive training, organization, and support protocol for school and community stakeholders aimed at increasing school/community competence in responding to and preventing student emotional and behavioral health crises.

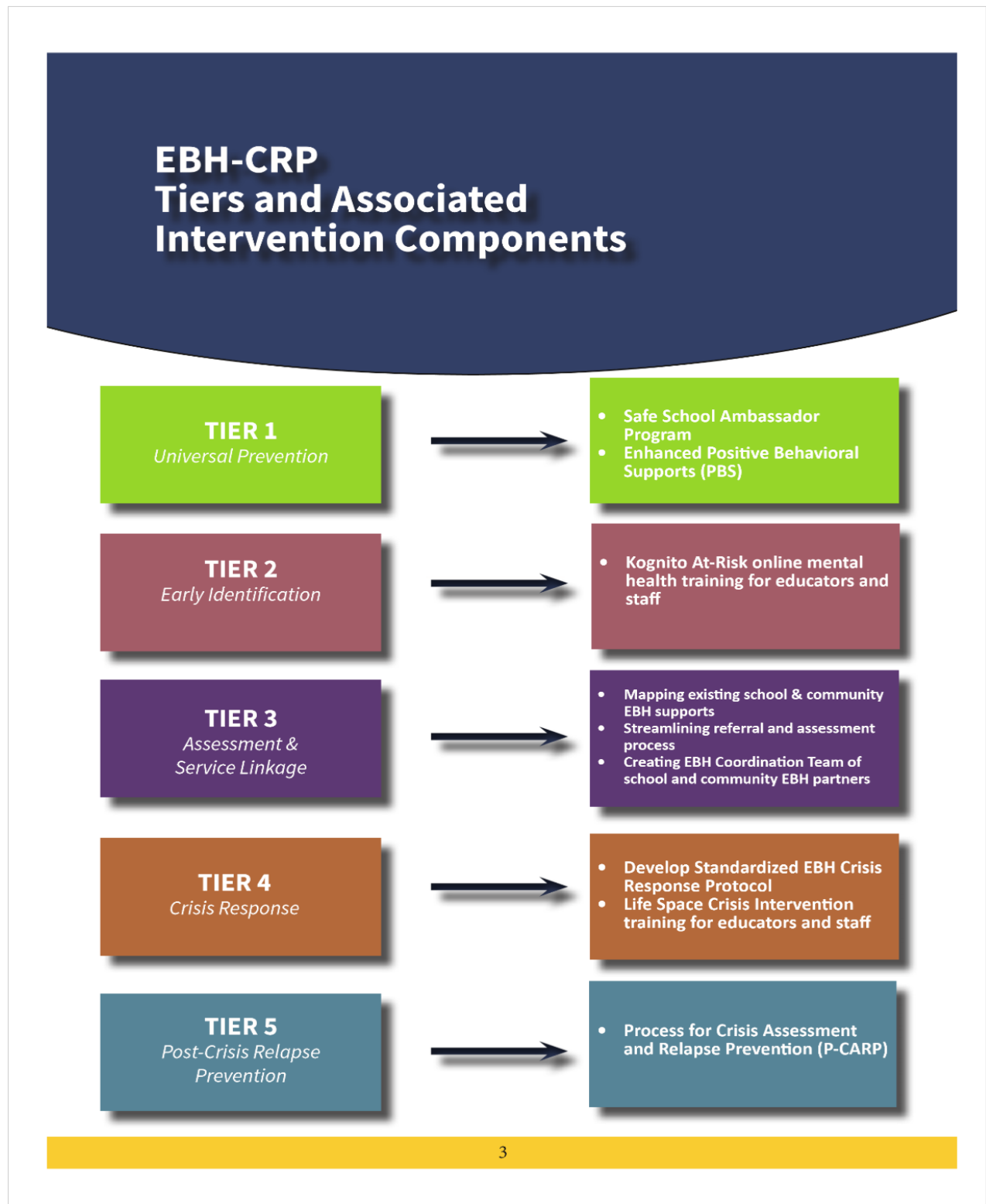
- Evidence-based
- Culturally competent
- School-informed
- Is efficiently coordinated across child serving systems
- Builds on existing school/community resources
- Stream-lined emotional and behavioral health crisis response & prevention protocol
- Addresses emotional & behavioral health concerns across the contiuum

METHODS

The cost-benefit analysis is part of a randomized controlled trial of the impact of the EBH-CRP on school saftey.

Baseline Year 0 = 2014-2015		Intervention Year 1 = 2015-2016		Intervention Year 2 = 2016-2017	
20 Intervention Schools	13	Elementary	14	20 Comparison Schools	
	5	Middle	4		
	2	High	2		
2 “feeder patterns” in each condition, matched on key demographic and emotional and behavioral health variables.					

Appendix 8



Appendix 8

Intervention Costs

PURPOSE of ANALYSIS

To provide estimates of the overall and component resource costs attributable to the EBH-CRP.

Information primarily from:

- Project tracking forms
- BCPS administrative sources
- U.S. Bureau of Labor Statistics data (i.e., salaries)
- Consumer Price Index (i.e., inflation)
- MD state gov't policy documents

Estimated total cost includes:

- Budgetary costs (i.e., the money spent)
- Value of time spent by -
 - teachers
 - administrators
 - emotional-behavioral health staff

The budgetary costs are also sometimes called “direct costs” whereas the value of time spent is categorized as “indirect costs.”

Indirect Costs = (time spent in activity) x (labor cost per unit of time)

Labor Costs = (wages) + (fringe benefits) + (employer payroll tax)

Appendix 8

Intervention Benefits

PURPOSE of ANALYSIS

To provide estimates of the over costs averted/net savings achieved by the EBH-CRP, compared with the comparison group schools that did not receive the training and service intervention components.

Information on school outcomes from:

- BCPS administrative sources
- External reference sources, project records (e.g., cost per day suspended)
- U.S. Bureau of Labor Statistics data (estimated salaries)
- Consumer Price Index (adjusted for inflation)
- MD state gov't policy documents

Estimated total cost includes:

- Budgetary costs (i.e., the money spent)
- Value of the added time spent by - teachers
administrators
emotional-behavioral health staff

Averted costs = Gross savings

Net savings (or net costs if negative) = (savings) - (costs)

Appendix 8

Key Findings

**OVERALL
EBH-CRP
INVESTMENT**

\$699,752
+ **\$429,961**

\$1,429,713

in 2015, w/ **\$491,161** in direct purchases

in 2016, w/ **\$389,135** in direct purchases

Gross Savings



\$709,300
over the 1st two years

Half of the cost of the intervention was offset by indirect savings due to increased student attendance at school (or reduced suspension days) and by fewer office referrals.

Appendix 8

Key Findings

- * The EBH-CRP intervention resulted in **greater school attendance**.
- * Given greater attendance, we can speculate that **students will experience gains in achievement** that were not measured in this study.
- * Given these potential additional gains, **our estimate of benefits is likely an underestimate of the long-term gains** resulting from the EBH-CRP model.
- * The **cost of implementing the EBH-CRP intervention decreases significantly in the expansion years** (see Tables 1c-e in the full report) and thus, the **net savings may account for more of the intervention cost in the expansion years**.

This cost-benefit analysis includes several limitations that should be considered while reviewing findings.

- * This analysis included a broad measure of cost that included both direct costs and also indirect costs to include all possible costs to the system.
- * Only several outcomes (school days missed, office referrals, and suspensions) were able to be used in assessing net benefits (school days missed, office referrals, and suspensions).
- * Other outcomes (suspension-to-designee, school-related arrests) that were planned for inclusion did not have data available in the baseline year.
- * There are potentially other outcomes with related costs that were not collected as part of this study and thus the **net benefits may not fully consider all possible outcomes impacted by the intervention**.

Appendix 8

