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A Randomized Controlled Trial of the Scenarios and Solutions Gang Prevention Program

Final Report

Award #: 2019-R2-CX-0014

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Summary of the Project

Major Goals and Objectives

It has been well established that gang-involved youth engage in substantially more violent and illegal activities than youth not involved in gangs (Calhoun, 2016; Dong & Krohn, 2016; Melde & Esbensen, 2013; Pyrooz et al., 2016; Thornberry, 2003). Consequently, there has been great interest among law enforcement, policymakers, and community leaders across the United States in developing strategies to reduce gang activity and membership. Gravel et al., (2013) identified various types of gang control programs found in the literature, based on a review of 45 studies evaluated using an experimental or quasi-experimental design. Gang control programs include prevention, gang activity regulation, corrections-based intervention, comprehensive, and holistic programs. While it may appear that a holistic approach—including prevention, intervention strategies in both community and institutional settings, and suppression strategies—would have the strongest impact in reducing gang activity in a given community, there is still limited knowledge about what constitutes an effective program in each category. Consequently, there is a general consensus that more evaluations of programs utilizing an experimental or quasi-experimental design are necessary to determine effective strategies, particularly for primary and secondary gang prevention programs (Gravel et al., 2013; Huey et al., 2016; Wong et al., 2012). However, secondary prevention programs that provide targeted interventions to those most at risk for joining a gang may be more effective than primary prevention programs that provides prevention programming to everyone in a given population (Hennigan et al., 2014a). Furthermore, while evaluations of prevention programs have primarily been implemented in elementary and middle schools, some evidence suggests that high school students, particularly

youth transitioning to high school, particularly between the ages of 13 and 15, have an elevated risk of joining a gang (Hill et al., 2001; Pyrooz & Sweeten, 2015). Therefore, secondary prevention programs are also crucial for high school students as well.

The findings from the literature indicate that there is no single factor or combination of factors that definitively drives youth into joining a gang. Thus, identifying youth who should be targeted for secondary prevention programs is a notably difficult task. Nevertheless, the findings generally suggest that several factors such as accumulated strain from stressful life events, possession of antisocial tendencies, and high levels of impulsivity and risk-taking, problematic beliefs that justify offending, weak parental monitoring, negative peer influence, associating with delinquent friends, and early engagement in delinquent activities all significantly increase the likelihood of a youth deciding to join a gang (Hennigan et al., 2014b). In order to address this gap in the literature with regard to determining what combinations of risk factors should be used to identify youth most at risk for joining a gang, Hennigan and colleagues (2014) developed and validated the Gang Risk of Entry Factors (GREF) assessment tool, which includes risk factors found to be most salient in influencing gang membership based on a review of the literature.

Schools often serve as a site for delivering gang prevention services. The Gang Resistance Education and Training Program (G.R.E.A.T.) program is one example of a primary prevention program for elementary and middle school students. This is one of the few primary prevention programs that has been found to be effective in reducing gang involvement among the students who have participated in this program (Esbensen et al., 2012). Due to the limited number of evaluations of secondary prevention programs, no secondary prevention programs delivered in school settings have been identified as being effective.

Over the past couple of decades, school-based clinics have increased in popularity as a

source for providing primary and behavioral health care to K-12 students. School-based health clinics have been shown to be effective in increasing student access to health care services, especially in medically underserved areas (Brown & Bolen, 2003; Calhoun et al., 2019; Kisker & Brown, 1996). Additionally, they have improved a variety of health conditions that can interfere with learning (Murray et al., 2007). Specifically, these clinics and intervention programs have proven to be an effective and efficient means of addressing issues such as PTSD (Rolfesnes & Idsoe, 2011), anxiety (Mychailyszyn et al., 2012), depression (Farahmand et al., 2011), obesity (Lavelle et al., 2012), and substance use (Mitchell et al., 2012) in a location that is easily accessible for students. There is also evidence that utilizing school-based services is associated with a reduction in school dropout rates among the highest-risk students (Kerns, 2011). However, the general body of research suggests that school-based health programs have a limited impact on academic outcomes and may need to incorporate additional interventions, such as social skills training, to improve these outcomes among students who utilize clinic services (Murray et al., 2007). Likewise, findings from an older study suggest that school-based clinics do not impact risk-taking behaviors (Kisker & Brown, 1996). While increasing access to comprehensive school-based physical and behavioral health services has improved health conditions that can interfere with learning, this may not suffice to prevent gang involvement if risk factors for joining a gang are not adequately addressed. Thus, the main objective of this study was to conduct a randomized controlled trial to assess the effectiveness of a curriculum-based gang prevention program in addressing gang risk factors within a school setting.

Research Question

This study's primary research question was: Do students randomly assigned to the Scenarios and Solutions group demonstrate greater improvement in the GREF risk domains (Antisocial Tendencies, Impulsivity, Parental Supervision, Peer Influence, Neutralizations) compared to students randomly assigned to the waitlist comparison group? It was hypothesized that participants randomly assigned to receive the curriculum-based gang prevention program in addition to the standard clinic services will have a greater reduction in gang risk factors than those randomly assigned to receive just the standard clinic services.

Research Design, Methods, Analytical and Data Analysis Techniques

This study employed a randomized controlled trial of the Scenarios and Solutions gang prevention (SSGP) program using a waitlisted control (WC) group design among middle school and high school students enrolled in the gang prevention services provided by the partnering clinic. Procedures were reviewed and approved by the University of California, Los Angeles, Institutional Review Board.

At the start of the project, the participating school-based clinic modified their standard operating procedures to integrate the GREF into their screening tool, incorporate the gang prevention program into their clinic services, and adopt randomization procedures. Clinic staff worked with school administrators to identify students who were at risk of joining a gang and worked on getting parental consent for those students to receive clinic gang prevention services. After receiving parental consent, the student was formally enrolled to receive services at the clinic and entered into the clinic's patient registry that they used to keep track of students in need of gang prevention services. The clinic used a random number generator to assign

evaluation IDs to students. These IDs were then entered into an online randomization portal developed and managed by the Data Management Center housed at the UCLA Integrated Substance Use and Addiction Programs to obtain the group assignment for the students. The group assignment was recorded in the patient registry.

Upon enrollment, students completed a baseline assessment during their initial clinic visit through a cloud-based assessment platform. This self-administered assessment automatically calculated scores and highlighted critical issues in real-time, such as suicidal behaviors, allowing the clinic to quickly address any immediate concerns. The clinic developed a tailored treatment and service plan for each student based on the assessment results, which included placement into the Scenarios and Solutions Gang Prevention (SSGP) program. The SSGP Program start date for each student—either immediate or at the next available session—depended on their randomized group assignment. The clinic also linked the students to other services within the clinic, community, or school that were based on their treatment and service needs. They offer a comprehensive range of services within the clinic that include, but are not limited to, treatment for chronic illnesses such as diabetes and asthma, behavioral health and substance abuse counseling, nutrition programs, peer mentoring, life skills training, and general counseling.

The clinic attempted to conduct a single follow-up assessment with students in both the SSGP group and the control group approximately 3 months following their baseline assessment to gauge the students' progress, making adjustments to their service and treatment plan as needed. To reduce the burden of completing a lengthy assessment during the follow-up, the clinic streamlined the process by retaining GREF scales that focused on attitudes and beliefs while omitting scales that included a timeframe (e.g., during the last three months) that overlapped with the delivery of the intervention or were not likely going to change within a short

period of time to ensure that we would be better able to assess intervention effects.

As mentioned above, the clinic incorporated scales from the GREF assessment into their standard universal screening packet. Developed as part of a broader gang reduction initiative in Los Angeles, California, the GREF was designed by Hennigan et al. (2014) to systematically identify youth at high risk for gang involvement, making them suitable candidates for secondary prevention programs. The assessment evaluates risk across several domains: antisocial/prosocial tendencies, parental supervision, critical life events, impulsivity, neutralizations, peer influences, family gang influences, peer delinquency, and self-reported delinquency. Each domain draws from validated scales, with higher scores indicating greater risk. The domains can also be dichotomized to indicate low risk (zero) or high risk (one). The baseline assessment included all of the scales except the critical life events scale as the clinic was already using the PEARLS to screen for adverse childhood experiences and related life events screener as a Medi-Cal provider.

The Scenarios and Solutions Gang Prevention (SSGP) Program: The SSGP program is a curriculum-based gang prevention program comprising of an introductory session and 12 subsequent sessions that focus on dispelling street myths related to gang involvement (Gulley, 2010). These street myths include myths such as "I'm not a follower," "Death before dishonor," "My homies love me," "Nerds are punks," "The crazier, the better," and "Snitches Get Stitches. Throughout the program, the facilitator works to challenge these misconceptions, with the aim of fostering critical thinking and promoting healthier decision-making among participants.

The full program utilizes a cognitive behavioral framework that incorporates key principles from Aker's social learning theory (Akers, 2017) where there is a general understanding that the social interactions in peer groups structure the setting in which the social

learning of behavior occurs. The SSGP program is designed to be delivered in a group setting that is facilitated by someone with the lived experience of being in a gang who has been able to overcome their early challenges to lead a successful life outside of the gangs. Differential reinforcement is another component of Akers's Social Learning Theory and is represented in the program through facilitator feedback on the participant's responses and engagement with the curriculum. Imitation is the final component of Aker's Social Learning Theory. As part of the program, participants take part in role-playing exercises to give the participants a chance to practice the new skills that they learn in the program.

As part of the curriculum, students are asked to read an urban fictional novel based on the lived experiences of the program developer and complete assignments in the accompanying workbook. At the start of the program, the facilitator introduces the concept of the three Cs (i.e., Choices, Communication, and Control) that participants should take into account when in risky situations. Specifically, participants are taught that for every situation, there is a right or wrong choice, that they are able to communicate in a non-confrontational but direct manner, and they have the power to control their actions. The curriculum connects a street myth to a scenario from the novel and asks the program participants to identify the mistakes made by the main protagonist of the story and how they would have done things differently. They are also asked to explain how the street myth relates to them either directly or indirectly. For each session they are asked to describe how the three Cs can be applied to each scenario.

For this study, the SSGP curriculum was delivered in a group setting by the program developer. This program is taught using a combination of interactive teaching techniques that includes group discussions, role-playing, feedback and reinforcements, and homework assignments to help the participants engage more deeply in what they have learned and give

them the opportunity to practice the new skills they have learned during the program.

Analytic Strategy: A secondary analysis of clinic assessment data was conducted to evaluate differences at baseline and for hypothesis testing. The data was de-identified using the Safe Harbor method to ensure compliance with privacy regulations. Chi-square tests for differences among categorical variables were conducted to assess any significant differences between the groups at baseline. However, in cases where the assumptions for chi-square tests were violated, particularly when the expected cell counts were less than 5, Fisher's exact test was employed as an alternative method to evaluate group differences. Independent t-tests were conducted to assess differences in continuous variables at baseline. Differences between the two study conditions were analyzed using analysis of covariance (ANCOVA). The key outcome measures at post-test were treated as dependent variables, treatment condition (SSGP or WC) as the factor, and pre-intervention scores of the outcome variables as co-variates. In accordance with an "intent to treat" design, all students randomized to the SSGP group were included in the analysis, regardless of whether they attended any group sessions. All statistical tests were two-sided with a significance level of less than 0.05.

Expected Applicability of the Research

There is a growing recognition of the need to integrate public health approaches into strategies to address gang involvement (Gebo, 2016). Public health approaches emphasize prevention strategies to prevent gang involvement. Additionally, this approach actively involves a diverse array of stakeholders, ensuring a broad spectrum of perspectives and inputs that enhance the development of a comprehensive gang prevention strategy. School-based clinics hold significant potential as platforms for delivering comprehensive gang prevention services,

leveraging their access to at-risk youth to address and mitigate the factors that contribute to gang involvement directly within a healthcare framework.

While school-based health clinics have made strides in broadening access to primary and behavioral health services, the reality is that the myriad of service providers involved, both within and external to the clinics, often operate in silos. This disconnect can lead to fragmented care experiences for students and their families. Recognizing this, there is an increasing push for more holistic services that enhance the patient's experience through an integrated approach to care coordination and delivery. Integration in this context exists along a continuum, defined by the extent and location of collaborative practices within the system. For example, partial integration might see school-based clinics housing primary care, mental health professionals, and gang prevention specialists who, despite working onsite, are affiliated with different organizations with varied patient care protocols. While numerous integrated care models have been tested across different environments, no definitive best practice has emerged as universally applicable. Especially within school settings, where the school acts as the portal for a wide array of services, knowledge about how to effectively integrate systems of care remains limited.

This study was the first to examine the feasibility of incorporating gang prevention services into an integrated care system within the context of a school-based clinic. However, disruptions due to COVID and other school priorities, organizational changes to the clinic's infrastructure, and the newness of the clinic at the new schools undermined our ability to fully assess the effectiveness of the Scenarios and Solutions gang prevention program. Nevertheless, this study provides valuable insights into factors that can impact the successful implementation and delivery of gang prevention programs within an integrated school-based clinical setting.

The challenges experienced in this study highlight the need for further research and refinement in implementing and evaluating gang prevention efforts within school-based integrated healthcare systems, especially with regard to increasing program retention.

Participants and Other Collaborating Organizations

Health Care Integrated Services played a crucial role as a collaborating partner in this study. They modified their clinic operations to incorporate the Scenarios and Solutions Gang Prevention program as one of the services offered to students in need of gang prevention services. Additionally, they integrated the GREF tool into their universal screening assessments to monitor changes in risk factors among students enrolled in the gang prevention services. They also implemented a randomization process as part of their standard operating procedures to assign students to either receive the Scenarios and Solutions program immediately or be placed on a waitlist for the next offering.

Changes in Approach

The initiation of our study coincided with the onset of the COVID-19 pandemic, leading to unprecedented challenges that necessitated a change to our target population of 9th grade students. With the emergency declaration in March 2020, the partnering school-based clinic had to close as schools transitioned to remote learning. This closure extended through all of 2020 and most of 2021, severely disrupting their service delivery, which included their universal screening program. The clinic's challenges were compounded by the loss of its dedicated space, a reduction in staff, and the end of a partnership with the previous school district, forcing a shift to a mobile clinic format.

Upon reopening in August 2021 within a new school district, their operational focus was

mandated to prioritize COVID-19 testing and vaccination, especially once vaccines were extended to youth. This directive limited their capacity to resume the universal screening program to its full extent. The clinic was only able to restart their universal screening program on a very limited basis during the spring semester of the 2021/2022 academic school year, as resources continued to be allocated predominantly to pandemic-related services for all K-12 students in the district. The persistent shortage of staff further led to reduced clinic hours, which, combined with these other factors, resulted in a substantial decrease in patient flow for universal screening compared to pre-pandemic levels. Consequently, given the limited patient flow and the small number of 9th graders and students overall meeting the high-risk criteria for gang activity using the GREF tool, we made the decision to broaden the target population to include all middle school and high school students referred to the clinic for gang prevention services.

Due to the clinic's transition to partnering with new school districts as a mobile clinic, it lost the autonomy it had previously enjoyed in its former district. Previously, as part of the clinic's universal screening program workflow, information about the program was sent out to parents giving them the chance to opt-out of services - operating as a passive consent process. With the clinic having an on-site presence 5 days a week, they could readily pull students out of class for assessments and programming unless parents had actively opted-out, which fewer than 5% did. However, with the change to the new school districts, the clinic had to implement an active parental consent process. This meant the clinic team could not meet with referred students for screening assessments until after receiving signed parental consent to enroll their child as a patient of the clinic.

We requested a one-year no-cost extension on the project because we anticipated a

large number of student referrals to the clinic in 2023 from a new school with a major gang presence on campus. This school was eager to implement the gang prevention program, leading us to expect a significant surge in enrollment numbers. However, the active consent requirement made it difficult for the clinic to enroll all of the students referred to them into the gang prevention program at the new school. Because of the various challenges encountered, including the change in workflows and obtaining active parental consent, we fell substantially short of reaching our target enrollment goal of 300 students that we had initially proposed for this study.

At the previous district, the clinic conducted follow-up assessments approximately every three months to monitor student progress as part of their universal screening program. Thus, we had planned to conduct two follow-up assessments - one approximately 3 months after the baseline and another 6 months after the baseline to see if any positive changes found at the end of the program were sustained over a longer period of time. We had also intended to complete up to 90 qualitative interviews with students from both groups to obtain feedback on the gang prevention services. However, since the clinic needed to build relationships with the new districts, they were cautious about pushing things that the districts did not prioritize, out of concern that it could potentially jeopardize their long-term work with them. Due to a change in the clinic's organizational structure, they had to work more closely with school officials and were more restricted in what they could do. These officials expressed concerns about pulling students from class for the GREF screening assessments and qualitative interviews. They were also more interested in the clinic providing other services, especially given the clinic was rotating between multiple schools rather than being based full-time at a single site like previously. With the clinic's time and access to campuses limited, they often had to prioritize other services over assessments. As a result, the only study-related activities allowed were a baseline assessment

and a single follow-up assessment approximately three months after the baseline. Thus, the six-month follow-up and qualitative interviews could not be conducted during this project. Not being able to conduct the planned 6-month follow-up assessment impacted our ability to assess differences in longer-term change several months after the intervention had ended. Additionally, not being able to complete the intended qualitative interviews with participants impacted our ability to thoroughly assess their experiences in the program and gain insights into issues around student engagement.

Initially, we planned a comprehensive fidelity assessment process, which included hiring a facilitator with lived experience to lead the sessions and completing a checklist at the end of each session to indicate what was or was not covered. The core components in each session included providing an overview of the street myth, a discussion on how the street myth influenced the protagonist's actions and decisions in the novel, identifying the protagonist's mistakes, exploring how the protagonist could have used the three Cs to navigate risky situations, and providing an opportunity for participants to apply these lessons to real-life scenarios. Additionally, our plan involved the program developer observing a random sample of six group sessions per cohort to assess whether the program was being delivered as designed. However, due to uncertainties throughout the project related to COVID and organizational changes, the program developer did not hire a facilitator because he had concerns about not being able to guarantee consistent work for that person. Therefore, the program developer facilitated all the group sessions, leaving us without a qualified observer, as he was the only one with the necessary expertise to assess the program's delivery. While the planned observations did not take place, the program developer did complete a fidelity checklist at the end of each session. These checklists showed that he was able to cover all the core components during all

the sessions he facilitated throughout the project period. Although the completed checklists offered some assurance of covering core components, the planned multi-faceted fidelity assessment would have provided a more comprehensive evaluation of program delivery.

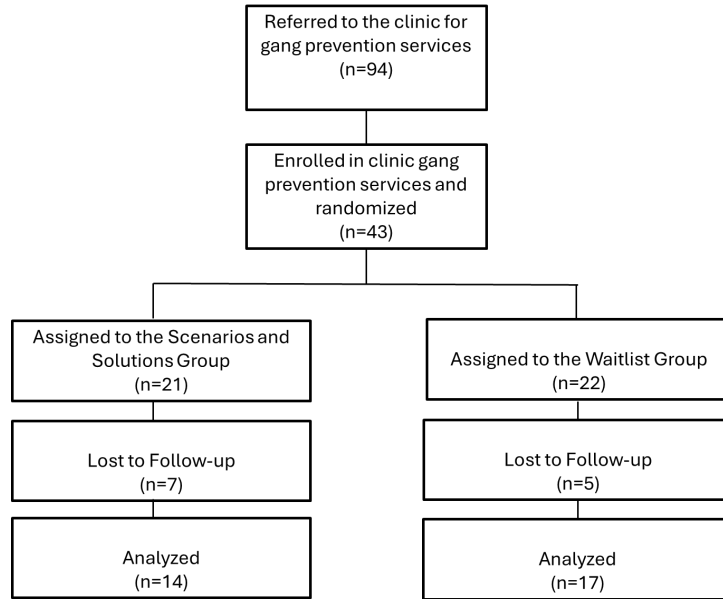
Outcomes

Activities/Accomplishments

The initiation of study-related activities within the clinic faced significant delays largely due to disruptions caused by the COVID-19 pandemic. Despite challenges, progress was made as the clinic adapted to the evolving circumstances. Although the clinic lost its dedicated space, it successfully established Memorandums of Understanding (MOUs) with two new school districts where they implemented their universal screening program and services at one middle school and two high schools.

Figure 1, depicted below, provides a visual representation of the flow of students through clinic activities based on their treatment status. A total of 94 students were identified by school administrators as needing gang prevention services and were referred to the clinic between May 1, 2022 and September 15, 2023. Out of these students, parental consent was obtained for 43, who were subsequently enrolled in the clinic's gang prevention services and randomized to receive the Scenarios and Solutions gang prevention program immediately or at a later date. All 43 students completed baseline assessments during their initial clinic appointment, with 31 students completing their post-intervention assessment. Two of the students in the WC group and one student in the SSGP group left the school before completing the post-intervention assessment. The remaining students who did not complete their second assessment never showed up to their follow-up appointments to do the assessment.

Figure 1: Participant flow and retention at post-assessment



The program developer facilitated 32 group sessions with students in the SSGP group between July 2022 and November 2023. To assess fidelity, the facilitator completed a session checklist after each session to indicate which components were or were not covered. Based on these checklists, the facilitator was able to cover all of the core components in each session. The SSGP groups were conducted up to two times a week, scheduled during periods outside of the students' core classes, such as during summer sessions or advisory classes, to minimize disruptions to their academic learning. There were sometimes breaks in between weeks to accommodate the school schedule. Attendance for these sessions was highly variable. Out of the students assigned to the SSGP group, 6 attended 1 to 3 sessions, 4 attended 4 to 6 sessions, 2 attended 7 to 9 sessions, 4 attended 10 to 13 sessions, and 5 students never attended any sessions. The size of the group sessions varied, with attendance ranging from 1 to 5 students, and averaging 3 students per session. This variability in attendance may have impacted the group dynamic and cohesion. While smaller group sizes can provide more opportunities for

students to participate and lead to potentially deeper discussions, the inconsistency in attendance likely affected the overall effectiveness and continuity of the group interactions.

Despite efforts by the clinic team, school staff, and SSGP facilitator to enhance student engagement during the project performance period through special events, motivating students to submit signed enrollment forms and to attend clinic and group appointments remained challenging. This task was further complicated by the novelty of both the clinic and the SSGP program within the schools, as students and parents were unfamiliar with the services and may have been hesitant to fully engage. While one of the districts has shifted focus due to changes in leadership, the other continues to confront a significant gang presence on its campus and remains dedicated to finding solutions to overcome these challenges to continue to offer the SSGP program as an option for students at risk for gang involvement.

Participation in this study allowed the clinic to significantly expand its focus, addressing gang risk factors on a much broader scale than before. Despite facing substantial challenges, including adapting to COVID-19 disruptions, forming relationships in new school districts with differing policies, and coping with the loss of dedicated clinical space and staff, the clinic has remained committed to refining their processes to better support these students. Moreover, the clinic has taken a proactive role in educating stakeholders about the potential of integrating gang prevention services within school-based systems of care. They have shared their insights and lessons learned to school administrators and through a workshop at the 2022 Safe Schools Conference, highlighting the model they created for this study and its implications for enhancing student safety and well-being.

Results and Findings

Participant Characteristics: The background characteristics of the students in this sample at baseline are presented in Table 1, both by group and for the overall sample. The majority of the sample was Black (70%) and male (63%). While the mean grade level for students was 10th, the overall range spanned from 6th to 12th grade. Most students reported visiting a healthcare setting for a physical exam or medical check-up within the previous 6 months or longer. Approximately 12% reported meeting with a therapist and 7% with a teen center counselor during the previous 6 months. Only one student in the WC group reported taking psychiatric medication. With regard to mental health issues, 44% reported experiencing anxiety, 37% reported experiencing depression, 40% reported experiencing PTSD symptoms, 5% reported hurting themselves on purpose, and 5% reported having suicidal thoughts. No statistically significant differences were found in any of these background characteristics.

Table 1: Background characteristics of participants by group at baseline

Variable	SSGP (n=21)		WC (n=22)		Total (n=43)	
	%	M(SD)	%	M(SD)	%	M(SD)
Black	71		68		70	
Male	67		59		63	
Grade level		10 (1.8)		10 (1.5)		10 (1.7)
Visited a healthcare setting for a physical exam						
<i>Never</i>	38		32		35	
<i>During the last 6 months</i>	24		32		28	
<i>More than 6 months ago</i>	38		36		37	
Met with a therapist (past 6 months)	10		14		12	
Met with a teen center counselor (past 6 months)	10		5		7	
Took psychiatric medication (past 6 months)	0		5		2	
Mental health						
<i>Anxiety (past 30 days)</i>	48		41		44	
<i>Depression (past 30 days)</i>	48		27		37	
<i>PTSD (past 30 days)</i>	33		46		40	
<i>Self-Harm (past 6 months)</i>	5		5		5	
<i>Suicidal Thoughts (past 6 months)</i>	5		5		5	

Table 2 provides an overview of exposure to adverse childhood experiences and related life events captured through the PEARLS screener by group and for the total sample. Students in the total sample experienced two adverse childhood events and one related life event on average. Notably, approximately half of the students in the total sample reported parental or caregiver incarceration, while about one-third experienced changes in their parents/caregivers' relationship status and community violence. Additionally, around 28% of the sample reported exposure to domestic violence in the home, emotional neglect, and discrimination. Furthermore, roughly 19% of the sample reported parental/caregiver mental illness diagnoses, emotional abuse, food insecurity, and parental/caregiver death. Approximately 16% of the sample experienced housing instability, while 14% were exposed to physical abuse, physical neglect, and parental/caregiver substance use. Even though exposure rates to the majority of adverse events

differed among the groups, these differences were not statistically significant.

Table 2: ACES and RLE exposure by group at baseline

Variable	SSGP (n=21)		WC (n=22)		Total (n=43)	
	%	M(SD)	%	M(SD)	%	M(SD)
ACES						
<i>Physical abuse</i>	10		18		14	
<i>Emotional abuse</i>	19		18		19	
<i>Sexual abuse</i>	10		14		12	
<i>Physical neglect</i>	14		14		14	
<i>Emotional neglect</i>	29		27		28	
<i>Parent/caregiver separation/divorce</i>	29		36		33	
<i>Parent/caregiver domestic violence</i>	24		32		28	
<i>Parent/caregiver substance misuse</i>	14		14		14	
<i>Parent/caregiver incarceration</i>	52		55		54	
<i>Parent/caregiver mental illness</i>	10		27		19	
RLE						
<i>Community violence</i>	24		41		33	
<i>Discrimination</i>	14		41		28	
<i>Housing instability</i>	14		18		16	
<i>Food insecurity</i>	19		18		19	
<i>Separated from parent/caregiver</i>	5		18		12	
<i>Parent/caregiver with serious physical illness</i>	5		9		7	
<i>Parent/caregiver death</i>	5		32		19	
<i>Criminal justice involvement</i>	10		9		9	
<i>Domestic violence victimization</i>	5		9		7	
ACE Score		2 (2.2)		3 (3.1)		2 (2.7)
RLES Score		1 (1.3)		2 (2.0)		1 (1.7)

Table 3 presents the mean GREF scores at baseline for the two groups, as well as for the total sample. Across various domains, both groups showed similarities and differences. In domains such as antisocial tendencies, weak parental monitoring, negative peer influence, peer delinquency, family gang influence, and delinquency, the scores were comparable between the SSGP and WC groups. Notable differences emerged in certain domains. Specifically, the SSGP group exhibited lower scores in the impulsivity and neutralization domains compared to the WC group. However, these differences were not statistically significant.

Table 3: Mean GREF scores at baseline by group

Variable	SSGP (n=21) M(SD)	WC (n=22) M(SD)	Total (n=43) M(SD)
Antisocial tendencies	12 (3.2)	12 (2.8)	12 (2.9)
Impulsivity and risk-taking	11 (3.2)	12 (3.7)	11 (3.4)
Use of neutralizations	16 (3.2)	19 (4.7)	18 (4.2)
Weak parental monitoring	10 (2.2)	10 (2.3)	10 (2.2)
Negative Peer Influence	13 (3.5)	13 (4.4)	13 (4.0)
Peer delinquency	10 (4.4)	10 (4.2)	10 (4.2)
Family gang influence	4 (2.2)	4 (2.4)	4 (2.3)
Delinquency	2 (2.1)	2 (2.7)	2 (2.4)

ANCOVA Results: Table 4 presents the results of the ANCOVA analyses using data from the baseline assessment and follow-up assessment. While the clinic aimed to conduct a single follow-up assessment with participants in both groups approximately 3 months (or 90 days) after their baseline assessments, the actual timing of the follow-up assessment for each student varied. On average, the clinic completed the follow-up assessments 113 days post-baseline, with a range of 80 to 134 days. Overall, no statistically significant differences were found between the two groups in any of the main outcomes, while adjusting for baseline assessment scores. The mean score for antisocial tendencies [$F(1,28) = 0.40, p=0.53$] and use of neutralizations [$F(1,28) = 0.04, p=0.85$] was the same for both groups. Mean scores for impulsivity [$F(1,28) = 0.61, p=0.44$] and parental monitoring [$F(1,28) = 2.10, p=0.16$] were slightly higher in the SSGP group when compared to the WC group. Finally, the mean score for negative peer influence [$F(1,28) = 0.75, p=0.40$] was slightly lower in the SSGP group when compared to the WC group.

Table 4: Mean and SDs of the outcome measures by group at post-assessment, and analysis of covariance

	SSGP (n=14) M (SD)	WC (n=17) M (SD)	<i>F</i>	<i>p</i>
Antisocial tendencies	11 (2.2)	11 (2.7)	0.40	0.53
Impulsivity and risk-taking	10 (3.4)	9 (2.7)	0.61	0.44
Use of neutralizations	16 (3.7)	16 (2.4)	0.04	0.85
Weak parental monitoring	11 (1.6)	10 (1.7)	2.10	0.16
Peer influence	11 (4.8)	12 (4.3)	0.75	0.40

Limitations

The study experienced many challenges that should be considered when interpreting the study results. First, implementation issues slowed the research process, influencing several parts of the study. The start of the gang prevention program coincided with the COVID-19 pandemic, which caused considerable disruptions in school activities and clinic operations. This disturbance, combined with organizational changes to the clinic's infrastructure, hampered the seamless implementation of the study-related activities. Additionally, transitioning to new school districts introduced further complexities, such as the need to establish new relationships, interruptions from competing school priorities, and having to adapt to new administrative policies.

Second, the small sample size posed a significant limitation, reducing the statistical power of the study. With a limited number of participants, the study may have been underpowered to detect meaningful differences between the intervention and control groups. This limitation underscores the need for caution when interpreting the study findings and highlights the importance of conducting future research with larger sample sizes. Third, the sample was primarily comprised of Black students attending high school in Southern California, which may limit the generalizability of the findings to other racial groups and geographic regions.

Fourth, many participants assigned to the intervention did not attend all scheduled sessions of the Scenarios and Solutions program, which limited their exposure to the full

curriculum and its potential benefits. This low dosage could have influenced the outcomes, potentially underestimating the effectiveness of the program. The variability in attendance highlights the challenges in ensuring consistent engagement and underscores the need for strategies to enhance participant retention in future implementations of gang prevention programs within a school-based setting.

Finally, low patient flow to the participating school-based clinic in the new schools post-pandemic, combined with few students meeting the high-risk criteria using the GREF tool, limited the pool of suitable participants. This necessitated reliance on school administrators to identify students at risk for gang involvement. Around a third of the students in the current sample were high risk in four or more domains, suggesting that the clinic may not have successfully reached the target audience of students who are high risk for gang involvement. Findings from the GREF validation study highlighted the challenges of substituting a systematic approach with assessments made by other sources, who may base their judgments on less systematic criteria (Hennigan et al., 2014a). Thus, the reliance on school administrators may have led to the inclusion of students who were not ideal candidates for the program.

Artifacts

List of Products

- Calhoun, S. Addressing gang risk factors within a school-based integrated system of care.
Under review at *Juvenile Justice Update*
- Calhoun, S. (In preparation) Exploring the relationship between adverse childhood experiences and impulsivity.
- Miller, E. (July 2022) Creating a village approach to identify and support student wellbeing. Workshop conducted at the Safe Schools Conference, Garden Grove, CA.

Data Sets Generated

- Individual-level dataset of pre- and post-assessment data for students randomized and enrolled in the clinic's gang prevention services.

Dissemination Activities

To date, dissemination activities have consisted of a workshop at the 2022 Safe Schools Conference to educate key stakeholders on the potential of addressing gang involvement and other high-risk behaviors within an integrated system of care, highlighting the model created for this study. Additionally, one manuscript has been submitted for review and another is in preparation.

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