Original Research Article

Evaluation of a Court-Ordered Violence Prevention Program for Gun-involved Youths

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Abstract

As youth gun violence continues to plague marginalized US communities, knowledge about "what works" to prevent injury and illegal gun activity within this population remains a contentious and pressing issue. This study investigates the impacts of Project Life—an education-based youth gun violence prevention program—on recidivism outcomes for a sample of 368 youths in Indianapolis, Indiana, between 2015 and 2019. We conducted retrospective outcome analyses to compare youths who completed the program (83%) to youths who did not complete the program. We find that youths who completed the program were significantly less likely to recidivate with a gun violence offense within an average follow-up period of 1.5 years following enrollment in the program. Youths who spent more time incarcerated and had a parent who was incarcerated were at higher recidivism risk when controlling for prior history of offending and other key risk factors. These nonexperimental findings show short-term promise for education-based violence prevention programming for youths at risk with fewer concerns of widening the net of carceral punishment.

Keywords

youth gun violence prevention, system-impacted youths, survival analysis, recidivism

Introduction

Gun violence continues to plague American cities. Most homicides are committed using a gun although nonfatal shootings occur at much higher rates than gun homicides (Hipple et al., 2019, 2020). Homicides are the second leading cause of death for people between the ages of 15 and 24 in the United States and the third leading cause of death for youths between the ages 10 and 14 (Centers for Disease Control and Prevention, 2020). Community members in low-income urban

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areas continue to be the most common interpersonal gun violence victims, especially young Black males (Kalesan et al., 2014; National Research Council, 2013). However, there is little research illuminating the causes of and effective responses to gun violence.

There is good reason that such gun violence research is lacking—there is very little federal funding to support such work. The "Dickey Amendment," first passed in 1996 and included by Congress in annual appropriations legislation that funds the Centers for Disease Control and Prevention (CDC), prohibits the use of federal funds to advocate or promote gun control. Broadly interpreted, the Dickey Amendment essentially made it challenging for the CDC (and, as of 2011, the National Institutes of Health) to fund gun violence research (Rostron, 2018). The effects of the Dickey Amendment and the resulting lack of funding have remained unchanged for more than 20 years despite the growing rate of gun-related deaths among children and adolescents beginning in 2014 (Goldstick et al., 2022). Change came in 2019 when Congress allocated US$25 million toward gun violence research, ending the federal funding drought. Meanwhile, one year later, firearm-related injuries surpassed motor vehicle crashes as the leading cause of death for people one to 19 years old (Goldstick et al., 2022). Thus, while even a small amount of funding for gun violence research can only be seen as positive, we are still woefully behind in this area.

To help fill this void, we present evaluation evidence for an education-based youth gun violence prevention program called Project Life implemented in Indianapolis, Indiana. Our sample includes 368 youths between 11 and 17 years old who had been involved in gun- and/or violence-related crime. Our results from survival and treatment effects analyses demonstrate a significant reduction in recidivism risk among those youths who completed the Project Life program, suggesting that this low-dosage court-ordered program may be a promising approach for protecting youths at high risk from continued involvement in gun violence. This research contributes to the body of scholarship documenting what works, what is promising, and what is ineffective in youth gun violence prevention.

Background

Legal attempts to reduce gun violence have sought to reduce gun ownership and possession, especially among youths. A 1994 amendment to the federal Gun Control Act of 1968 made 18 the national minimum age to possess or buy a handgun or handgun ammunition (§18 U.S. Code 922). While gun laws vary from state to state, most states prohibit juveniles from possessing guns that an adult would otherwise be allowed to possess. That is, gun carrying is illegal for people under the age of 18 across the United States.[1]

However, there is ample (but often dated) research suggesting that juveniles do indeed have access to guns (Beardslee et al., 2021) and may even be more likely to carry and fire a gun than adults (Watkins et al., 2008). Sheley and Wright (1995) surveyed more than 800 youths detained in juvenile correctional facilities in the early 1990s. Eighty-six percent of respondents indicated they had owned a gun at some point, with 83% indicating they owned a gun just prior to their confinement. Research from the same time period indicates that adolescents carry guns for protection (Cook & Ludwig, 2004; Decker et al., 1997; Lizotte et al., 1994) although other work disputes these findings (Steinman & Zimmerman, 2003). In addition to protection, gun carrying can be related to community violence levels (Cook & Ludwig, 2004; Molnar et al., 2004; Patchin et al., 2006) as well as social influences (Beardslee et al., 2021) and drug involvement (Steinman & Zimmerman, 2003). Lawmakers' attempts to curb gun violence through state legislation has proven difficult in that research demonstrates illicit gun markets can thrive even in states with the strictest of gun control laws (Hureau & Braga, 2018).

While evidence regarding the impact of gun policy on gun violence remains inconclusive (Branas et al., 2021; Morrall, 2018), alternative approaches for preventing youth gun violence

have included law enforcement responses, community-based prevention programs, and generalized educational programming. Law enforcement responses, such as focused deterrence, have proven to be effective (Braga et al., 2018) but require significant implementation resources and come with risks of widening the net of the criminal justice system. Communities often grapple with the implementation and sustainability of such intense efforts over time (Braga et al., 2018; Chermak & McGarrell, 2004; Hunter et al., 2017; Saunders et al., 2017). Likewise, community-based public health prevention models can be prohibitively costly to local government budgets and can also be difficult to sustain.

Research on programmatic responses to *juvenile* gun violence is limited and commonly centers on more general violence prevention and education—both areas in which impact is difficult to measure. These types of programs are delivered in a variety of locations as well, including schools and correctional facilities. For example, the Gang Resistance Education and Training (G.R.E.A.T) program is a school-based gang and violence education and prevention program. The outcome evaluation for the G.R.E.A.T. program employed a randomized control trial with long-term follow-up. It has been the subject of many studies and publications and has been shown to reduce gang membership and improve youths' relationships with law enforcement. However, most relevant in this case is that researchers found no support for long-term (i.e., four years post-treatment) reduced weapon violence among participants (Esbensen et al., 2013). The G.R.E.A.T program, supported by the Office of Juvenile Justice and Delinquency Prevention, continues in schools as of the writing of this manuscript.

A similar and still active program that also launched in the 1990s in Chicago, Illinois, is Project BUILD (Broader Urban Involvement and Leadership Development). Project BUILD is a violence prevention curriculum for incarcerated youths in Chicago. The program strives to reduce recidivism by helping youths overcome community-based problems like gang participation, crime, and drug use. An evaluation (Lurigio et al., 2000) found lower rates of recidivism as well as delayed recidivism for program participants, and the program was rated effective by CrimeSolutions.gov.[2]

One of the most well-known violence prevention and reduction programs targeted at youth homicide and youth gun violence was Boston's Operation Ceasefire. Operation Ceasefire used a "pulling-levers," or focused deterrence, approach aimed at interrupting the cycle of violence among a relatively small number of youths who fueled the cycle. The key outcome measure was homicide *victims* aged 24 and under. The results indicated that the intervention was likely responsible for a substantial reduction in youth homicides, shots-fired calls for service, and gun assaults (Braga et al., 2001; Piehl et al., 2000). However, the outcome measures did not examine the homicide suspects (i.e., the shooters), and the other nonfatal outcome measures were not limited to a specific age range (i.e., youths as defined). Others have tried to replicate the success of Operation Ceasefire in different locations, such as Stockton, California, and Lowell, Massachusetts. Outcome evaluations of both programs revealed a significant decrease in gun homicides (Braga, 2008; Braga et al., 2008). More recent work continues to demonstrate focused deterrence approaches can be effective at reducing violence as well (Corsaro & Engel, 2015; Fox & Novak, 2018; Roman et al., 2019).

Finally, there are a set of community-driven programs whose goal is to prevent retaliatory gun violence using violence interrupters. Violence interrupters are outreach workers who try to mediate conflicts between individuals or groups with the goal of a nonviolent resolution. Chicago Ceasefire, which became known as Cure Violence, is a well-known violence interrupter program. The evidence regarding its impact is equivocal (Skogan et al., 2008) and may be context specific. Baltimore Safe Streets was modeled after Cure Violence but was not limited to youths. An outcome evaluation revealed significant decreases in homicides and nonfatal shootings during the follow-up period (Webster et al., 2012).

Existing research surrounding gun-involved youths is often limited to studies nested within gang research (e.g., Braga et al., 2001; Braga et al., 2008; Braga et al., 2019; Esbensen et al., 2013) or focuses on weapon carrying more generally, (e.g., Patchin et al., 2006). Again, a lot of this work is dated. Moreover, the operationalization of "youth" varies across studies, making it difficult to make comparisons or generalizations. Also, while there is ample research on the risk and protective factors of youth violence in general, there is very little research on the risk and protective factors of gun violence specific to youths under the age of 18 (Schmidt et al., 2019). For instance, Schmidt et al. (2019) conducted a comprehensive review of risk and protective factors for firearm violence among youths. They found 28 empirical studies that met their criteria, one of which was that the sample must include youths 17 years of age or younger. Five of these studies examined firearm violence perpetration explicitly. Another five studies examined firearm violence in general, meaning that the studies did not differentiate between perpetration and victimization. The other categories for their review included firearm victimization and suicide by firearm.

Some patterns of risk related to gun violence perpetration did emerge in the studies focused on youth gun violence perpetration. Several studies found that a history of offending or delinquency was related to gun violence perpetration (Erickson et al., 2006; Sumner et al., 2016). Alcohol use and other substance abuse disorders were also risk factors (Carter et al., 2015; Erickson et al., 2006) as well as peer involvement with gun violence (Goldstick et al., 2017; McGee et al., 2017; Stevens et al., 2001; Sumner et al., 2016; Wilkinson et al., 2009). These findings correspond with other studies exploring the influence of social networks on the spread of gun violence (Papachristos et al., 2015) and the more general literature on the victim-offender overlap (Jennings et al., 2012). Finally, a consistent risk for general firearm involvement was access to firearms at home (Schmidt et al., 2019).

There is no doubt that with the increase in federal funding for gun violence research, the evidence base on effective prevention responses will grow, but it will take time. Still, communities affected by gun violence are seeking change now. The current study contributes to the small evidence base on responses to gun-involved youths.

The Current Study

The purpose of this study is to evaluate the effectiveness of completing the court-ordered program Project Life for reducing gun violence recidivism. Project Life is a violence prevention program in Marion County (Indianapolis), Indiana. Indianapolis was the 15th most populous city in the United States in 2020, with an estimated population of 878,000. The homicide rate in Indianapolis is consistently higher than the national average with between 17 and 18 homicides per 100,000 people since 2015, which increased significantly in 2020 to 24 homicides per 100,000 people. The national average for homicides, in contrast, has hovered at around five homicides per 100,000 people since 2015 (Federal Bureau of Investigation, 2019). The vast majority of homicides in Indianapolis are committed with a firearm. The rate of nonfatal shootings is considerably higher, occurring almost four times more frequently than firearm homicides (Hipple et al., 2019, 2020).[3]

Project Life is a community partnership program of the Marion County (Indianapolis, Indiana) Prosecutor's Office in collaboration with Indiana University (IU) Health Methodist Hospital Trauma Services, the Riley Hospital for Children at IU Health Trauma Services, Smith Level I Shock Trauma Center at Eskenazi Health, the Marion County Public Health Department, and Connections, Inc It consists of a nine-hour curriculum over three consecutive days during after-school hours, delivering direct messaging to teens on the realities and consequences of gun violence from criminal justice and public health perspectives. The program is planned and delivered by a curriculum committee, led by an injury prevention coordinator from one of the Level 1 trauma center hospital partners. The programming occurs at the offices of the behavioral health

partner (Connections, Inc). Transportation is not provided. Speakers and instructors include committee members as well as invited noncommittee members, for example, an officer from the local police department, a judge from adult court, a parent of a child affected by gun violence, or an approved Stop the Bleed[4] instructor.

Project Life participants are generally 13–18 years old. All youths are between 13 and 17 years old when they become eligible for the program; however, they could be 18 years old by the time they receive Project Life programming. They are on active probation supervision for an offense involving a gun or violence. Offenses include nonviolent and violent gun offenses and the entire range of offenses in between. Project Life is only for youths who the court has allowed to remain in the community with probation supervision. The Project Life curriculum includes graphic videos and visual media, group discussions, and community resource information and review materials.

Data and Measures

Data for 440 youths who were court-ordered to complete Project Life following conviction for an offense in Indianapolis, Indiana, between 2015 and 2019 were obtained from the Marion County Superior Court Juvenile Division and include court hearing records, histories of offending, police incident reports, and presentence investigations. We completed a final check of each youth's juvenile record on March 2, 2020, which marks the end of data collection for this study. The follow-up window we used to track juvenile system involvement varied across the youths in our sample depending on the specifics of their unique cases. Specifically, all youths entered the study prior to turning 18 years old when they were first charged with a qualifying offense.[5] The follow-up period to track the youths' outcomes closed either (1) when a youth turned 18 because we did not have access to adult records, (2) on March 2, 2020, when data collection ended, or (3) when the youth was rearrested. On average, the follow-up window for our sample youths was about 575.8 days (18 months) after the date of their qualifying charge (SD = 371.1; Min = 69.5; Max = 2,136; see Figure 1 for the distribution).

Our analysis considers recidivism outcomes for youths who completed Project Life and those who did not complete the program. We define the offense that qualified a youth for Project Life as the "qualifying charge," the first subsequent offense as the "recidivism charge," and any charges

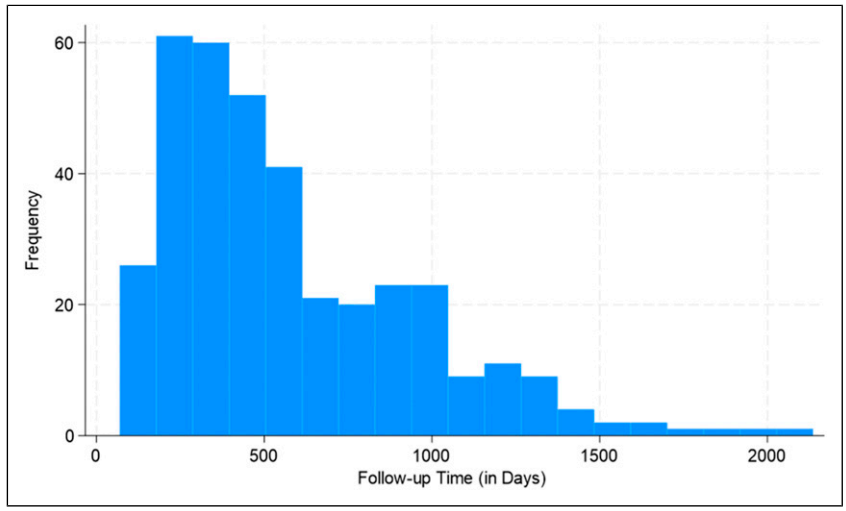

Figure 1. Histogram showing distribution of follow-up time windows (n = 368 youths).

that occurred prior to the qualifying charge as "prior charges." Of the entire universe of youth court-ordered to Project Life during the study period, n = 55 youths (12.5% of 440) turned 18 before their Project Life start date. We excluded these 55 youths because they would not be able to both complete Project Life AND recidivate in Marion County juvenile court system. This limitation of our data suggests that we may be underestimating recidivism risk for individuals in our sample who reoffended after turning 18 years old and/or who recidivated outside of Marion County. We also eliminated 17 youths due to missing or incomplete data for key variables. Our final sample size is 368 youths Figure 2.

We created the following measures to track each youth's journey through the juvenile justice system and identify risk and protective factors that contributed to their outcomes:

- **Project Life completion** (0/1) identifies youths who completed all Project Life program days. We refer to this group of youths as the "completion group" and the remaining youths who did not complete all program days as the "noncompletion group." We did not have access to reasons why youths did not successfully complete all program days.
- **Qualifying charge type** indicates the type of incident charge that resulted in referral to Project Life by the court, classified as follows:

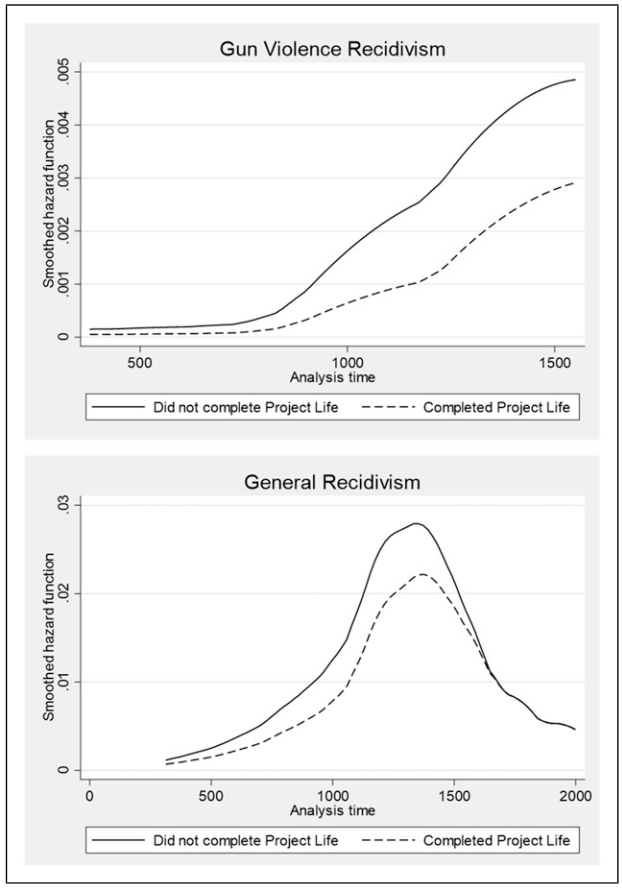

Figure 2. Hazard curves from Cox proportional hazards models showing differences in gun violence recidivism risk by program completion status (n = 368 youth).

  - o Nonviolent offense without a gun,
  - o Violent offense without a gun,
  - o Nonviolent offense with a gun, and
  - o Violent offense with a gun.
- **Gun violence recidivism** (0/1) identifies youths who were charged with a violent offense that involved the presence of a gun after their qualifying incident arrest.
- **General recidivism** (0/1) identifies youths who were charged with any offense after their qualifying incident.

We also created a set of demographic variables to examine differences across **race** (Black, White, other race), **ethnicity** (Latinx, not Latinx), **sex** (female, male), and **age at qualifying arrest**. Finally, we created a set of covariates to capture impacts from justice system involvement:

- **Age at first arrest** is the age when the youth was first arrested.
- **Number of months incarcerated** is a continuous measure of the time the youth spent incarcerated prior to their qualifying charge. This variable includes pre- and post-adjudication time.
- **Parent incarcerated** (0,1) measures whether a parent of the youth was ever incarcerated**.**
- **Number of prior gun or violence charges** is a continuous measure of the number of prior charges in the youth's record for an incident involving either violence or a gun.

Analytic Plan

Our primary research question asks whether completing Project Life reduces the risk of gun violence recidivism. In our results section, we describe the youths in our sample with summary statistics (see Table 1) and compare recidivism rates across groups (see Table 2). Table 3 reports model results explaining three youth outcomes of interest, including Project Life completion, gun violence recidivism, and general recidivism. The first model uses logistic regression to identify factors associated with the binary outcome of Project Life program completion. Models 2 and 3 estimate recidivism risk for gun violence and general recidivism using Cox proportional hazards models to adjust the estimates for right-censored time-to-event data. These survival models estimate how the risk of recidivism differs between those who did and did not complete Project Life, and they assess associations between the other covariates and recidivism risk in the sample. We exponentiated the model coefficients for reporting purposes so they can be interpreted as factor differences in the hazard rate.

Given that treatment was not randomized, we also estimated the average treatment effect of Project Life using a potential outcomes framework (Rubin, 2005; Sampson et al., 2013). We used a "doubly robust" combination of inverse probability weighting and regression adjustment (IPWRA) to generate the unobserved potential outcomes (Wooldridge, 2007, 2010).[6] We specified both an outcome model and a treatment model, allowing us to utilize all control variables to make the treatment and outcomes independent once conditioning on those covariates.[7] Post-estimation diagnostic tests indicated statistical balance among the covariates between the treated and untreated groups for the IPWRA model.

Results

Youth Sample Description

Each of the 368 youths in our sample was charged with an offense that qualified them for enrollment in the court-ordered Project Life program. Approximately 77% were convicted of

Table 1. Descriptive Statistics for Youths Assigned to Project Life (n = 368).

	Proportion or mean	Standard deviation	Minimum	Maximum
Demographics				
Male (*n* = 354)	.962	–	0.0	1.0
Female (*n* = 14)	.038	–	0.0	1.0
White (*n* = 79)	.215	–	0.0	1.0
Black (*n* = 260)	.707	–	0.0	1.0
Other (*n* = 29)	.079	–	0.0	1.0
Latinx (*n* = 29)	.079	–	0.0	1.0
Age at qualifying arrest	15.565	1.222	11	17
Justice system impact				
Age at first arrest	14.959	1.607	8	17
Parent was incarcerated	.046	–	0.0	1.0
Time incarcerated in months	2.222	1.893	0.0	9.7
# Of prior gun/violence charges	.198	.480	0.0	3.0
Qualifying offense charge				
Nonviolent offense without a gun	.122	–	0.0	1.0
Violent offense without a gun	.052	–	0.0	1.0
Nonviolent offense with a gun	.761	–	0.0	1.0
Violent offense with a gun	.065	–	0.0	1.0
Completed project life	.834	–	0.0	1.0
Recidivism				
Violent offense with a gun	.082	–	0.0	1.0
Any offense	.405	–	0.0	1.0
Study follow-up window length (Days)	575.814	371.095	69.5	2136.0

nonviolent offenses with a gun, such as carrying a handgun without a license and dangerous possession of a firearm, while 6.1% were convicted of violent offenses with a gun, such as armed robbery and battery by means of a deadly weapon. Interestingly, 12% of the youths who were court ordered into Project Life were charged with a nonviolent offense that did not involve a gun. We attribute these instances to the discretionary nature of the court process. Table 1 shows characteristics of our sample. More than 96% of the sample was male, 70.7% were Black, and the average age at qualifying charge was 15.5 years old (SD = 1.222; Min = 1; Max = 17). All but 17 (3.9%) of the youths were incarcerated for some time prior to their qualifying charge, the average for more than 63 days (SD = 55.9; Min = 0; Max = 295).

Outcome Rates by Individual Factors

Table 2 shows how outcomes varied across youths in our sample. More than 83% of the sample completed all three days of the Project Life program. All 14 of the female youths completed Project Life, whereas only 82.9% of the male youths completed the program. Youths who identified as a race other than Black or White (*n* = 29) completed Project Life at a lower rate than other racial groups, and nearly all Latinx youths completed the program. Among the lowest completion rate was among youths who spent more than six months incarcerated prior to their qualifying charge (40% completion) as well as among youths who had a parent who was incarcerated (58% completion).

Table 2. Outcome Rates by Individual Factors (n = 368 Youths).

	% Completed project life	% Recidivated gun violence	% Recidivated any charge
Demographics			
Male (*n* = 354)	82.8	8.2	41.0
Female (*n* = 14)	100.0	7.1	28.6
White (*n* = 79)	93.7	2.5	31.7
Black (*n* = 260)	82.3	10.4	42.3
Other (*n* = 29)	65.5	3.5	48.3
Latinx (*n* = 29)	96.5	6.9	44.8
Age at qualifying arrest			
11–12 years (*n* = 8)	71.4	0.0	28.6
13–14 years (*n* = 60)	79.7	42.4	61.0
15–16 years (*n* = 217)	84.3	26.5	44.1
17 years (*n* = 155)	84.7	12.2	21.4
Justice system impact			
Age at first arrest			
<10 years (*n* = 1)	100.0	0.0	100.0
10–12 years (*n* = 11)	72.7	0.0	63.6
13–15 years (*n* = 121)	77.7	10.7	52.9
16–17 years (*n* = 235)	86.8	7.23	32.8
Parent was incarcerated			
Yes (*n* = 17)	58.8	17.7	47.1
No (*n* = 351)	84.6	7.7	40.2
Time youth was incarcerated			
0–30 days (*n* = 121)	92.6	5.0	19.8
1–3 months (*n* = 153)	87.6	9.1	36.6
4–6 months (*n* = 70)	72.9	7.1	71.4
7–9 months (*n* = 21)	47.6	23.8	81.0
10–12months (*n* = 3)	0.0	0.0	66.7
# Of prior gun/violence charges			
0 priors (*n* = 306)	84.0	8.2	39.9
1 prior (*n* = 53)	79.3	9.45	47.2
2 priors (*n* = 7)	100.0	0.0	14.3
3 priors (*n* = 2)	50.0	0.0	50.0
Qualifying charge type			
Nonviolent offense without a gun (*n* = 45)	80.0	4.4	53.3
Violent offense without a gun (*n* = 19)	79.0	5.3	36.8
Nonviolent offense with a gun (*n* = 280)	85.0	8.2	38.2
Violent offense with a gun (*n* = 24)	75.0	16.7	45.8
Completed project life program			
Yes (*n* = 307)	–	5.5	36.5
No (*n* = 61)	–	21.3	60.7
Total	**83.4**	**8.1**	**40.5**

Table 3. Model Results Explaining Project Life Completion and Recidivism Outcomes (n = 368 Youths).

	Model 1	Model 2	Model 3
Covariates	Project life completion	Recidivism—gun violence	Recidivism— any charge
Demographics			
Male[a]	–[a]	.495 (.520)	1.246 (.645)
White[b]	2.991* (1.634)	.154* (.144)	.751 (.196)
Other[b]	.351* (.173)	.107* (.118)	1.165 (.370)
Latinx[c]	4.031 (4.489)	5.262† (4.899)	1.481 (.519)
Age at qualifying arrest	.959 (.174)	1.311 (.336)	2.853*** (.339)
Justice system impact			
Age at first arrest	1.017 (.140)	1.810* (.423)	1.261** (.110)
Parent was incarcerated[d]	.153** (.088)	5.052* (3.478)	1.414 (.549)
# Of months incarcerated	.648*** (.055)	1.326** (.136)	1.072 (.047)
# Of prior gun/violence charges	1.334 (.477)	.364† (.216)	.984 (.196)
Qualifying charge type[e]			
Violent offense without a gun	.829 (.647)	.971 (1.283)	1.028 (.485)
Nonviolent offense with a gun	.863 (.417)	1.844 (1.412)	1.214 (.326)
Violent offense with a gun	.584 (.399)	1.932 (1.785)	.934 (.380)
Completed project life	–	.330** (.139)	.599* (.135)
Constant	26.727 (62.602)	–	–

Notes: †$p < .10$; *$p < .05$; **$p < .01$. Exponentiated coefficients are presented. Standard errors are shown in parentheses.
[a]Reference category is "female." This variable is omitted in Model 1 because all $n = 14$ girls completed Project Life.
[b]Reference category is "Black."
[c]Reference category is "not Latinx."
[d]Reference category is "parent was never incarcerated."
[e]Reference category is "nonviolent offense without a gun."

More than 40% of all youths in the sample recidivated and were charged with a new offense during the follow-up period, and 8.1% were rearrested and charged with a violent offense with a gun violence specifically. Youths who completed Project Life recidivated at a much lower rate than those who did not complete the program, cutting the rate of gun violence recidivism by 74% and general recidivism by 39.8%. Males recidivated at a higher rate (41%) than females (28.6%), and Black youths recidivated with a gun violence offense at four times the rate of White youths (2.5% vs. 10.4%). Youths who were incarcerated for longer recidivated at a higher rate than those incarcerated for fewer days, and youths with an incarcerated parent recidivated with a gun violence charge at more than twice the rate as those without an incarcerated parent.

Models

Model results explaining program completion and recidivism are shown in Table 3. Model 1 shows that White youths were significantly more likely to complete Project Life than Black youths, while youths who identified as any other race were significantly less likely to complete the program than Black youths. Youths with a parent who was incarcerated had 84.7% lower odds of completing the program than youths whose parents were not incarcerated, and this difference was statistically significant. Moreover, for each month (30 days) that a youth was incarcerated prior to

their qualifying arrest, the odds of completing Project Life decreased by 36.2%. This effect is substantial given that the average youth was incarcerated for more than two months.

Models 2 and 3 show the results from survival models explaining recidivism risk while adjusting the estimates for right-censored time-to-event data. Youths who completed Project Life had 77% lower odds of committing a violent offense with a gun than those who did not complete the program (p = .009) and 40.1% lower odds of recidivating in general (p = .023) while controlling for the other variables in the model. White youths and youths of other races were significantly less likely than Black youths to recidivate with a violence offense with gun, but the differences were not statistically significant for recidivism in general. Youths who were older at the time of their qualifying arrest and youths who were older when first arrested were significantly more likely to recidivate.

Justice system impact measures also had significant associations with recidivism risk. Youths with a parent who was incarcerated had 5.1 times (510%) higher odds of gun violence recidivism than youths without a parent who was incarcerated (p = .019), and each month that a youth was incarcerated was associated with 32.6% higher odds of gun violence recidivism (p = .006).

Average Program Completion Effects

We estimated values to represent the average difference in the likelihood of recidivating for youths who completed the program and those who did not conditioned on all individual factors included in the models above. The average effect of completing Project Life versus not completing the program was −.149 (SE = .060; p = .013) for recidivism with a violent offense with a gun and .005 (SE = .070; p = .944) for recidivism in general.

Discussion

This research contributes to published evaluations of youth educational prevention programming specifically designed for high-risk gun-involved youths. Youths in the sample who completed Project Life were significantly less likely to be charged with a new gun violence offense after being assigned to the program. Whereas other educational prevention programs for youths have shown to be ineffective for reducing weapons violence (e.g., see Braga et al., 2018), Project Life shows promise for reducing continued involvement in gun violence for high-risk youths, at least in the short term.

In the broader US context, by comparison, Project Life requires fewer resources and may be easier to implement compared to other violence prevention strategies that prescribe large-scale enforcement or implementation efforts. Although evidence-based "pulling-lever" approaches (e.g., Operation Ceasefire) often include some educational components, they are often dwarfed by high-dose enforcement activities that require vast law enforcement resources that may exacerbate strained police-community relations (for example, see Brunson & Wade, 2019; Gau & Brunson, 2010). By contrast, completing the Project Life program led to large reductions in recidivism risk, especially for gun violence offenses.

This work demonstrates that Project Life program completion is important. That is, even a relatively small program dosage (9 hours over three days in this case) may have a protective effect against future offending. It also illustrates risk factors that court officials and program managers can work to mitigate to support program completion. For example, most of the youths in our sample had spent time incarcerated, and we found that incarceration is positively associated with future offending. This finding aligns with a recent review highlighting the importance of rehabilitative programming for reducing recidivism among high-risk populations (Loeffler & Nagin, 2022). Interestingly, the risk assessments for youths in our sample indicated that more than one-

half of our sample should not have been eligible for Project Life. That is, 53.3% of youths ordered to complete Project Life were rated as high risk and therefore *should have been detained*—something our work revealed as detrimental to future desistance—and not been eligible for Project Life. Future research should examine these human decisions in depth, especially those that go against validated risk assessment recommendations. Indeed, incarceration is an aggravating factor for recidivism, but there is also empirical work demonstrating that being on community probation is as well (Sumner et al., 2016).

Relatedly, Lambie and Randell's (2013) review of research published on incarceration outcomes and rehabilitative limitations of incarceration for youth offenders since 2000 concluded that incarcerating youths has many negative effects but does not have a protective impact on crime. They suggested that effective rehabilitation is important. While our project did not examine youths who were incarcerated for gun violence, it does support the notion that Project Life can be part of a multiprong rehabilitative approach to keep gun-involved youths out of jails and prisons without significantly increasing community risk.

The results from our project are promising and contribute to the very limited research on gun-involved youths. We also make actionable suggestions. However, this work is not without limitations, as already noted. We did not have a formal control group or randomization. The criminal history data are right censored because youths aged out of the juvenile court system at 18 years old, and we did not have access to adult court records or records outside of Marion County. Similarly, we do not know why those youths who did not complete the programming were unable to do so. Further research should also examine the effects of partial program completion (i.e., one or two days) on recidivism. This type of analysis might tease out specific program components that are more important than others. And, while gun violence is a pervasive problem across the United States; we do not know the influence of the local context in which this program occurs. That is, our findings may not be not generalizable. More research in this area is needed even with limitations like ours. Future research should seek to follow youths into the adult system. In this case, the voices of gun-involved youths are unheard, implying that future work should strive to incorporate these voices as well.

Given the ubiquitous gun violence problem in the United States, all research on this topic is needed, including work using data sourced from outside the criminal justice system. For example, attention-deficit/hyperactivity disorder and conduct disorders are known contributors to violence-related arrests and incarceration (Whiting et al., 2021). Linking criminal justice data with health data and using them to inform policy and practice make intuitive sense in that doing so creates an organic opportunity to examine things from a cross-disciplinary perspective, which might reveal additional and/or new risk factors and thus new points for intervention. In this case, Project Life is managed and delivered by a cross-disciplinary committee and any such findings could help shape the curriculum.

We have evidence that justice system involvement tends to reinforce future gun violence instead of deterring it (Bernburg & Krohn, 2003; Gatti et al., 2009; Trulson, 2005). Even though Project Life is a low-dosage education program and its long-term effects are unknown, program completion is protective, delaying future justice system contact. This finding is important because of the potential to prevent future gun violence at the individual level and, therefore, at the community level. Program managers should be looking at ways to support youths to complete Project Life programming until other research can identify better long-term options. Similarly, Project Life might be a complement to non-court-ordered programming like Cure Violence or other public health or community-based approaches. That is, it presents another avenue for a response to youth gun violence that does not carry the same risks as law enforcement–heavy responses.

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Notes

1. Notable exceptions include possession while under the supervision of a parent or guardian and possession for target practice or hunting.
2. crimesolutions.ojp.gov/ratedprograms/335#eb
3. Source: Indianapolis Metropolitan Police Department.
4. https://www.stopthebleed.org/
5. Charges refer to those brought forth by the prosecutor, not those listed in the police incident report.
6. Models were estimated in Stata 17.0 using the command. The estimators used either propensity score matching () or a combination of inverse probability weighting and regression adjustment () to compute the potential outcome means (StataCorp, 2021).
7. We tried to utilize the command in Stata 17.0 to estimate a treatment effects model with survival time-to-event data, but the models would not converge to produce reliable estimates.

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