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African-American males in Chicago: Pathways from early childhood intervention to reduced violence

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Abstract

Purpose—Extreme youth violence is a salient public health crisis in Chicago, particularly among African-American males. This manuscript examines mechanisms through which a preschool intervention program – the Child-Parent Center (CPC) program, in inner-city Chicago may divert high-risk males from pathways leading to violent criminal behavior.

Methods—We conducted a path analysis from early environmental factors to socioemotional competencies through parent involvement and achievement to violent arrest in emerging adulthood. African-American male participants (N = 677) were followed from age 3 to age 27.

Results—CPC program attendance initiates a pathway to increased 3rd grade academic achievement and parent involvement, which positively impact socioemotional competencies and acting out behaviors in adolescence. High parent involvement and low acting out behaviors had direct effects on violent crime in emerging adulthood.

Conclusions—High parent involvement in school, fostered by early childhood intervention, promotes adaptive behaviors in adolescence and reduces arrest for violent crime in emerging adulthood.

Keywords

parent involvement; early intervention; violence; males; pathways to violence prevention

In the decades spanning the end of the 20th and beginning of the 21st centuries, violent crime rates in the United States decreased by nearly half, from 757.7 cases per 100,000 people in 1992 to 365.5 cases per 100,000 people in 2014.¹ This belies the disproportionate effects of violent crime on the African-American community, where violent crime rates have declined more slowly than in the general population.² In 2011, despite comprising just 12% of the US population, 38.3% of individuals arrested for violent crime and half of individuals arrested for homicide specifically were African-American.¹ African-Americans are also far more likely to be victims of violent crimes than Caucasians.³ In 2012 homicide was the

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leading cause of death for African-American males ages 10–24 years old in the United States; furthermore, homicide rates in 2010 were 51.5 per 100,000 for African-American males compared to 2.9 per 100,000 for Caucasian males.⁴

Chicago, Illinois has come to embody this stark disparity, where a recent poll revealed that African-American residents were far more likely to think the youth in their neighborhoods would be victims of a violent crime or go to jail as to graduate from college,⁵ and where city officials have deemed gun violence a “public health crisis.”⁶ By September of 2016 there had been more homicides in Chicago than in the next two most populous cities, Los Angeles and New York, combined.⁷ Violent crime is clustered in African-American areas of the city, with 25% of the city’s violent crimes occurring in just two out of 22 police districts.⁸ In 2011, despite comprising just 32% of Chicago’s population, 75% of victims and 70% of perpetrators of homicides were African-American males.⁹

Importantly, males in adolescence and emerging adulthood are most likely to commit violent crimes.¹⁰ Furthermore, African-Americans are more likely to be arrested than equivalently offending Caucasians,^{2,11} thereby encountering law enforcement, the criminal justice system, and the resultant repercussions of a felony record at higher rates as well. It is clear that violent crime and involvement in the criminal justice system is a problem that is seriously affecting Chicago’s urban communities. This study examines predictive factors and mechanisms that may deter inner-city African-American males from involvement in violent crime, with the aim of reducing rates of youth violence through comprehensive early childhood intervention.

Harsh Early Environment and Youth Violence

Research indicates that early environmental factors, (e.g. harsh home life and exposure to neighborhood violence) predict youth violence.¹² Environmental stress predicts these outcomes even when controlling for more proximal violence exposure.¹³ The effects of harsh environments may disrupt children’s development of age-appropriate competencies, contributing to failure in later developmental stages.^{14,15} However, not all children exposed to such situations engage in later violent behavior.¹⁶ Identifying developmental factors that have the potential to divert high-risk youth from pathways leading to violent criminal behavior is needed.

Academic achievement partially accounts for the association between early harsh environmental factors and later antisocial behavior.¹⁷ Evidence indicates that low parent involvement is related to behavior problems in adolescence,¹⁸ Furthermore, poor social competencies and have been implicated as predictors of violent behavior^{16,19,20} suggesting that the best approach may be to intervene before these behaviors become evident.

Violence Prevention Programs

Primary prevention programs designed to divert youth from violent behavior are numerous and diverse in approach. In the past, programs that targeted narrow populations and single risk factors were found to have limited success,²¹ and nearly half of rigorously studied youth violence prevention programs were found to be ineffective or iatrogenic.²² The most

promising approach for reducing violence on a community level may lie in comprehensive strategies that “attend to the accumulation of risk factors across multiple levels of the social ecology.”^{21,23} In their meta-review, Matjasko and colleagues²³ found that programs that targeted family factors were more effective than those that did not. Further, programs beginning earlier in life and addressing the students’ school, home, and community environment combined have been found to be more effective than programs that begin later and target just one setting.²⁴

Early Intervention

The Chicago Longitudinal Study²⁵ has followed a low-income, mainly African-American sample for 30 years. The participants are a cohort of children who attended the Child-Parent Center program (CPC) in the South and West sides of Chicago, and a comparison group. The CPC is a preschool-3rd grade intervention providing wraparound services to children and their parents. Long-term positive outcomes for participants have been documented across a variety of developmental domains.²⁶ The theoretical basis of the CPCs is found in Bronfenbrenner’s ecological systems theory, suggesting that development reflects interactions among levels of environmental systems. Specifically, the CPC program aims to provide an enriching, stable environment for children during the early to middle childhood years. The program attended by the current participants focused on four elements: early intervention, parent involvement, a structured curriculum focusing on language and basic skills development, and continuity between preschool and early elementary school.²⁵

Very limited research has been conducted into the effects of early childhood intervention on violent crime. One exception is a previous investigation into the CPC program, which found that CPC attendance increases parent involvement in school, subsequently decreasing the likelihood of juvenile arrest (prior to age eighteen) for any type of crime.²⁷ Additionally, Hawkins and colleagues found that an elementary-aged intervention reduced self-reported violent crime in adolescence.²⁸ However, the effects of a comprehensive early childhood intervention starting in preschool on arrest for violent crime in adulthood have not been examined.

Disentangling behavioral, cognitive, and environmental processes for high-risk youth will contribute to understanding the triggers and warning signs of extreme youth violence, as well as whether high-quality early childhood educational (ECE) interventions are a way to derail these negative trajectories.

Parent Involvement, Problem Behaviors, and Youth Violence

A critical feature of the CPC program is parent school involvement. Although frequent and consistent parent involvement has been associated with increases in long-term student achievement^{29,30} and health outcomes,³¹ the effects of these factors on adult violence are unclear. Evidence suggests that parent involvement is related to children’s behavior problems in adolescence³² and that these problems then predict deviant behaviors, including violence, in emerging adulthood.¹⁹ As delinquent behavior and engagement in criminal activity incur a large cost to society,²⁶ it is imperative that these processes be identified.

Research suggests that parent involvement affects juvenile delinquency and aggression.³² The influence of parent involvement in children's lives starts early during the preschool years and continues to have significant influence throughout childhood across numerous domains of development.^{18,33,34} It is unclear whether there are other critical elements that explain the relation between early parent involvement and early adult outcomes.

In the criminological literature, some studies have examined the dynamics of parent involvement, social competencies, and deviant behavior.³⁵ More specifically, Perrone and colleagues,³⁶ studying a large representative sample of youth, found that adolescent social competencies partially mediated the relation between parental efficacy and deviance. Research in this area sheds light on the associations among parent involvement, childhood self-regulation, and adult violent outcomes. However, literature empirically investigating the impact of parent *school* involvement on violence in emerging adulthood from a developmental perspective is limited and thus warrants further investigation.

The Present Study

We investigated the impacts of CPC, parent school involvement, and early environmental risk on developmental pathways leading to violent crime in emerging adulthood. This study builds on prior research indicating that CPC attendance increases parent involvement in school, subsequently decreasing the likelihood of *juvenile* arrest for any type of crime.²⁷ Extending this literature and narrowing the focus, we investigated arrests for violent crimes in adulthood amongst our African-American male participants. Specifically, we focus on early environmental factors (e.g. intervention participation, risk status, poor home environment), parent involvement and academic achievement in middle childhood, and early adolescent social competencies and behavior problems in school leading to violent arrest in emerging adulthood. Extreme violent behavior was conceptualized as any arrest for violent crime (e.g. assault with a deadly weapon) between the ages of 18 and 27 based on arrest records. We hypothesized that early childhood environmental factors and CPC intervention may set in motion a cascading effect through academic achievement and parent school involvement, to socioemotional competencies in adolescence ultimately leading to lower rates of violence in adulthood.

Methods

The sample for the current analysis comprises 677 African-American male participants from the Chicago Longitudinal Study (CLS; original N = 1539; 704 African-American males), an investigation of the effects of the Child Parent Center (CPC) intervention program.²⁴ In this quasi-experimental design, participants who attended the CPC program (n = 424) and a comparison group (n = 253; from randomly selected schools participating in an alternative early childhood intervention in kindergarten) were matched on baseline demographic factors such as age, eligibility for intervention, and poverty level.²⁵ Participants have been followed into adulthood. As they were part of an existing school-based program, the CPC intervention group included the complete cohort of CPC participants. Consistent with previous analyses utilizing the full sample, there were no significant differences in levels of pre-intervention demographic risk or harsh early environment (see Table 1). The Institutional Review Board

Human Subjects Committee of the University of Minnesota has approved this study. Informed consent was obtained from caregivers when participants entered the study, and assent and consent were obtained at each subsequent round of data collection.

Key Predictor Variables

CPC participation—CPC preschool program participants, ages 3–4, were coded as 1; comparison participants as 0.

Harsh early environment—Participants were coded 1 if a child had any of the following from birth through age 5: a welfare case history as determined by administrative records, frequent family conflict as reported retrospectively at age 22–24, or substance abuse of a parent as reported retrospectively at age 22–24.

Risk status—Risk status indicated the number of the following risk factors a child had from birth through age 3: Mother 18 years or younger at child's birth, mother had not completed high school, four or more children in the household, TANF participation, eligible for free lunch, mother not employed full-time, 60% or greater households in poverty in school attendance area, or parent was a single parent.

Parent involvement—Parent involvement was measured as the cumulative average of teacher ratings of various aspects of parent involvement in the school in grades 1–3, on a Likert scale ranging from 1 to 5, with 1 indicating “poor/not at all” and 5 indicating “excellent/much.” Teachers were asked how frequently the parent communicates with the school, participates in school activities, helps in the classroom, talks with the teacher about the child, and attends conferences.

Academic achievement—Academic achievement in 3rd grade was measured by the *Iowa Test of Basic Skills* (ITBS).³⁷ ITBS reading comprehension scores were measured in the spring of 1989 (Form 7, Level 8 or 9). This subtest included 44 multiple-choice items on recognizing facts, making inferences, and developing generalizations from textual material. The internal consistency reliability is .91. We analyzed a recoded indicator, indicating performance at or above national norms in third-grade reading scores as 1, and those who scored below national norms as 0.

Socioemotional competencies—Socioemotional competencies were measured by the *Teacher-Child Rating Scale- Frustration Tolerance, Peer Social Skills, and Acting Out Behaviors Subscales* (TCRS).³⁸ Teachers rated the classroom behaviors of participants when they were in the 6th and 7th grades with the TCRS. This measure has acceptable reliability and validity.³⁸ The subscales were rated on a Likert scale ranging from 1 (not a problem) to 5 (very serious problem) on five or six items, for total possible scores of 25 or 30. The frustration tolerance subscale assessed characteristics such as “accepts things not going his/her way” and “accepts imposed limits.” Internal consistency reliability for this subscale in the current sample was excellent (grade 6 $\alpha = .90$, grade 7 $\alpha = .89$). The peer social skills subscale measured the extent that the student had positive, prosocial interactions with classmates (e.g., “friendly towards peers;” “classmates wish to sit near this child”). Internal

consistency reliability for this subscale in the current sample was excellent (α grade 6 = .92, α grade 7 = .90). The acting out subscale assessed disruptive and oppositional behaviors, with items such as the extent to which students were “disruptive in class,” and “defiant, obstinate, stubborn.” Internal consistency reliability for this subscale in the current sample was also excellent (grade 6 α = .94, grade 7 α = .94).

Violent arrest—Violent arrest was measured as a dichotomous variable, and included administrative records of adult arrest obtained from county, state, and federal-level data. Participants with any violent arrest between ages 18–27 years were coded 1. Participants were coded 0 if they were not arrested for a violent offense between these ages. Supplementary self-report survey data was also used for individuals who did not have an administrative record of violent arrest but self-reported arrest for a violent crime at age eighteen or older. Violent arrest was characterized as arrest for any of the following offenses: aggravated discharge of a firearm, assault, battery, criminal sexual abuse/assault, domestic battery, kidnapping/unlawful restraint, murder, attempted murder, robbery, vehicular hijacking, and unlawful use of weapons. Administrative county-level arrest data were gathered from criminal court records in Cook County, Illinois. State-level arrest data were obtained through manual online record searches of the Illinois Department of Corrections web site (www.idoc.state.il.us), the Wisconsin Circuit Court Access (WCCA; www.wcca.wicourts.gov), the Iowa Courts (www.iowacourts.state.ia.us), the Minnesota Department of Public Safety and the Minnesota Bureau of Criminal Apprehension (www.cch.state.mn.us) primarily, as well as the Department of Corrections system from 15 other states. Federal-level records were collected from manual online record searches of The Federal Bureau of Prisons web site (www.bop.gov).

Data Analysis Plan

Path analyses were run using Mplus 7.3³⁹ to investigate the relations among early environmental factors, school parent involvement, achievement, adolescent socioemotional competencies, and violent crime in emerging adulthood. We hypothesized that positive early environmental factors would increase parent involvement and academic achievement, thereby increasing socioemotional competencies and reducing acting out behaviors in adolescence, ultimately reducing rates of violent arrest in emerging adulthood. The hypothesized path model is shown in Figure 1. Our model used an MLR estimator and Monte Carlo integration with violent arrest specified as categorical. Variables that occurred at the same time point were inter-correlated to control for covariance. Overall, about 20% of data was missing in this sample (see Table 1). Missing data were handled using Full Information Maximum Likelihood with MLR estimation.

Results

Correlations

Correlations for all variables in the path model are shown in Table 2.

Path Analysis

Results of the full path analysis are displayed in Figure 2. Non-significant paths are omitted. The final model, spanning from birth to age 27, accounts for 10% of the variance in violent arrest in emerging adulthood. For every 1-point increase in acting out behavior, the odds of a violent arrest increase by a factor of 1.08, and for every 1-point increase in parent involvement, the odds of a violent arrest decrease by a factor of .79.

Indirect Paths—Significant total indirect effects were found from all early environmental variables (CPC attendance, demographic risk, and harsh early environment), and two specific indirect paths were identified. First, CPC participation was associated with increased parent school involvement, which then contributed to lower rates of arrest for violent crime in emerging adulthood ($\beta = -.08, p = .05$). Second, early demographic risk was associated with decreased parent school involvement, which then contributed to higher rates of arrest for violent crime ($\beta = .04, p = .05$). No direct effect between intervention and violent arrest was found; rather, results indicate CPC participation initiates a pathway resulting in reduced arrest rates for violent crime in emerging adulthood via increased parent involvement and reduced acting-out behaviors.

Discussion

Our results indicate that participation in the CPC program initiates a pathway resulting in reduced rates of arrest for violent crime in emerging adulthood. CPC involvement and demographic risk had indirect effects on violent arrests through parent involvement in school. Parent involvement had a direct effect on violent arrests, even when controlling for acting out behaviors in adolescence.

The CPC program provides a solid developmental foundation for children's success through encouraging and increasing parent involvement in school. An extensive literature shows that parent involvement has positive effects on other aspects of well-being, such as academic achievement and health outcomes. In addition to confirming previously found associations between higher academic achievement and stronger socioemotional competencies, results from this study indicate that parent involvement in middle childhood directly influences violent arrest in emerging adulthood, over and above adolescent classroom behavior problems.

While early intervention has been shown to impact incarceration rates,²⁶ and cost-benefit analyses demonstrates that the CPC program results in life-course crime savings of \$4.99 per dollar invested,²⁶ the effects of comprehensive early childhood intervention on violent crime specifically have not previously been investigated. This study adds to the considerable literature on the importance of early experiences on later functioning, suggesting that violent crime, an especially relevant issue for low-income African-American males, can be reduced through prevention programs beginning early in life.

This investigation has several strengths. Variables in the model were measured at multiple levels, including parent-report, teacher-report, direct assessment, and administrative records. Furthermore, data in this large-scale longitudinal study were collected over the span of

several decades, with an attrition rate of less than 5% in the current sample. Given that our model shows significant prediction from middle childhood and early adolescent variables to emerging adult outcomes, accounting for 10% of the variance in violent arrests is noteworthy. Of particular note is that parent involvement in 1st–3rd grade had a direct effect on violent arrest nearly two decades later.

Limitations

Despite the observed relation between parent involvement and violent arrest, it is clear that other factors not accounted for in the model have an impact on youth violence (e.g., gang involvement; neighborhood poverty). While this study focused on child, school, and family level factors, future investigations should attempt to account for community level factors as well. Nevertheless, our results indicate that parent involvement has a powerful influence on children, both directly and through social competencies and classroom behaviors.

A further limitation is that the measure of harsh early environment included retrospective reporting of frequent family conflict and substance abuse of a parent, and therefore may be less reliable than concurrently collected data. This type of data is difficult to obtain concurrently due to the sensitivity of the information especially if children are living in the environment in question, but future research should attempt to obtain this information as temporally close to the events in question as possible.

Furthermore, there has been renewed media attention given to the treatment of African-Americans by both the criminal justice system and law enforcement, raising concerns over systemic injustice and inequality. This is an important piece of the puzzle when discussing crime as it relates to the African-American community, and arrest statistics may well reflect bias and profiling in addition to actual perpetration of crimes.⁴⁰ The nature of our outcome variable is a limitation given that it measures arrest, not conviction. As such, it may capture individuals who were wrongfully arrested or found not guilty, and conversely may not capture individuals who committed violent acts but were not arrested.

Implications

This investigation supports previous findings suggesting that violent crime can be averted through early, comprehensive programs that affect change via the family. Further, these findings make an important contribution to the literature on mechanisms of violence prevention, especially for young African-American males in inner-city Chicago. This is a particularly salient issue for this population, as violent crime in Chicago has been declared a public health crisis,⁶ and interventions have been largely ineffective. While violent crime has dropped drastically in the United States in the 21st century, young African-American males continue to be involved in violent crime, both as victims and perpetrators, at disproportionate rates. Our results suggest that preschool interventions can deter males from developmental pathways leading to violent crime by increasing parent involvement and thereby decreasing classroom “acting out” behavior that is strongly associated with later criminal behavior. Furthermore, the direct effect of parent involvement on violence even when controlling for acting out suggests that parent involvement in the early elementary

years may also have a ripple effect extending to factors that contribute to positive adaptation above and beyond social competencies.

Relatedly, research overwhelmingly suggests that the most effective violence prevention programs begin early in life and are comprehensive, addressing the child ecologically through the family, school, and community.^{21–23} This investigation indicates that the CPC program, which already has deep roots in many of Chicago's most high-crime areas, may be an important catalyst for violent crime prevention through its fostering of strong parent-child relationships, parent involvement in school, and socioemotional competencies in adolescence.

Conclusion

Early childhood intervention programs such as the CPC program have far-reaching effects on well-being in adolescence and adulthood; this is one of the first investigations showing that such a program can reduce rates of violence in emerging adulthood. Specifically, the CPC program promotes positive parent-child relationships through increasing parent involvement in school, which, in turn, contributes to positive adaptation. Violence prevention can and should begin before children are engaging in violent behavior. Comprehensive early intervention programs, which affect change in numerous areas of a child's life, may be an efficient and impactful mechanism to this end.

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Implications and Contributions

This investigation suggests that the Child-Parent Center Preschool program has a potential role in the prevention of violent crime in African-American males. CPC attendance increases parent involvement in school, which directly influences both acting out behavior in adolescence and violent crime in emerging adulthood.

Figure 1.

Path analysis examining early environmental variables, cognitive advantage, parent involvement, and social competencies on violent arrest

$R^2 = .10^{**}$

AIC: 10945.621

BIC: 11090.187

Sample Size Adjusted BIC: 10988.583

Note: Non-significant paths are omitted from the figure. $^{\dagger}p < .10$, $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Table 1

Study variable descriptive statistics

Variable	Intervention Status	N	M (SD)	%	Range
Pre-intervention					
Risk status	CPC	424	4.45 (1.69)		0–7
	Comparison	253	4.68 (1.74)		1–7
Harsh early environment	CPC	424		26.2%	
	Comparison	253		27.3%	
Intervention period					
Parent involvement	CPC	359	2.62 ^{***} (.99)		1–5
	Comparison	206	2.26 (.96)		1–5
Academic achievement	CPC	369	95.91 ^{**} (16.46)		50–145
	Comparison	211	90.95 (18.07)		48–131
Peer social skills	CPC	214	15.9 (4.36)		5–25
	Comparison	113	15.87 (4.02)		5–25
Frustration tolerance	CPC	311	13.36 (4.33)		5–25
	Comparison	169	12.96 (4.11)		5–23
Acting out behavior	CPC	214	13.14 (6.33)		6–29
	Comparison	113	13.60 (6.62)		6–30
Post-intervention					
Violent arrest	CPC	424		33.0%	
	Comparison	253		32.8%	

Note:

* $p < .05$ ** $p < .01$ *** $p < .001$.

Table 2

Correlation matrix for variables in path analysis model

	Risk status	CPC participation	Harsh home environment	Academic achievement	Parent involvement	Peer social skills	Frustration tolerance	Acting out behavior	Violent arrest
Risk status	--	-.066	.117**	-.265**	-.275***	-.103	-.099*	.064	.084*
CPC participation		--	-.012	.139**	.178***	.006	.045	-.034	.002
Harsh home environment			--	-.096*	-.185***	-.200***	-.084	.024	.069
Academic achievement				--	.334***	.255***	.275***	-.180**	-.129**
Parent involvement					--	.259***	.227***	-.169**	-.151***
Peer social skills						--	.574***	-.456***	-.088
Frustration tolerance							--	-.633***	-.156**
Acting out behavior								--	.224***
Violent arrest									--

Note:

* $p < .05$
** $p < .01$
*** $p < .001$.