ABSTRACT
        This summary explaining the results of evaluations of
programs to prevent youth violence is an attempt to fill the gap in
information about what works and what does not. An effort is made to place
the problem of youth violence in perspective, using information largely taken
from Bureau of Justice statistics. The existing programs are divided into
three groups: those that have been evaluated and found to be effective; those
that have yielded disappointing or mixed results; and those that are
promising, but have not been evaluated. In the first category are programs
for the prevention of unintended pregnancy and infancy and early childhood
interventions that include a variety of approaches, such as home visits,
various types of family therapy, programs for children, and innovative
policing. The category for less effective programs includes a number of
individual-level interventions, including some mentoring programs, peer
counseling, drug education, and vocational and employment programs. Also
grouped with the less effective programs are some community-level
interventions, including neighborhood cleanups and gun buybacks. Strategies
that appear promising, but have not been tested include: (1) family literacy
programs; (2) firearm safety training; (3) disrupting gun trafficking to
youth; and (4) support groups for victims. This review is extensive, but not
exhaustive. New programs are being developed every day, and these new
approaches deserve careful evaluation. A list of 10 "must read" citations is
provided, along with an extensive bibliography. (Contains 104 references.)
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Urban Health Initiative

working to ensure the health and safety of children

Preventing Youth Violence

A Summary of Program Evaluations

Arthur L. Kellermann, MD, MPH

Dawna S. Fuqua-Whitley, MA

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2

Urban Health Initiative Monograph Series

Children living in America's most distressed urban areas today face an almost constant battery of threats to their health and safety. High rates of infant mortality, teen pregnancy, inadequate prenatal care, substance abuse, mental and emotional distress, injury, sexually transmitted disease and the rising tide of violence all contribute to a climate in which children fail to thrive. The statistics are daunting – and the complexity of these problems defies easy solutions.

The Urban Health Initiative Monograph Series seeks to examine both traditional and innovative approaches to overcoming urban health problems, specifically those affecting children and youth.

3

Preventing Youth Violence

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4

5

contents

Introduction

Youth violence has been a problem throughout history, but it has become both more frequent and more severe over the past decade (Snyder 1996). Violence and other causes of injury represent a serious threat to the health and safety of urban youth. Homicide now is the second leading cause of death for 15- to 19-year-olds, and the leading cause among African-American youth (source: Centers for Disease Control and Prevention). For youth 10 to 14, unintentional injury is the leading cause of death, and homicide is the third leading cause.

The traditional approaches of law enforcement and juvenile justice are necessary, but they are not sufficient to control this problem (Reiss and Roth 1993). Greater emphasis must be placed on prevention if we want to reduce the toll of juvenile violence and delinquency. This begs the question — what works? Concern about youth violence has spawned a cottage industry of experts and organizations offering a bewildering array of programs, services and equipment. It is often difficult to determine what has and has not been evaluated.

Unfortunately, there is no "buyer's guide" to violence prevention programs. The summary that follows is an attempt to fill that gap. First, we attempt to place the problem of youth violence in perspective. Much of the information cited in this section of the report was obtained from the Bureau of Justice Statistics. Second, we divide existing programs into three groups: those that have been evaluated and found to be effective; those that have so far yielded disappointing or mixed results; and those that are promising, but have not been adequately evaluated. Our list of programs is extensive, but it is not exhaustive. New ideas and initiatives are emerging every day.

To support our conclusions, we have assembled an extensive bibliography. We also identify 10 "must read" citations at the end of this paper. In our opinion, the best source of information on youth violence prevention and "state of the art" juvenile justice is *The Guide for Implementing the Comprehensive Strategy for Serious, Violent and Chronic Juvenile Offenders*. It is published by the federal Office of Juvenile Justice and Delinquency Prevention (OJJDP). *The Guide* is a user-friendly and authoritative work. Part I provides a blueprint for implementing OJJDP's comprehensive strategy for juvenile offenders. Part II reviews evaluation research on programs to prevent juvenile crime and violence. Part III outlines a detailed approach to graduated sanctions for juvenile offenders. Part IV presents a practical approach to risk assessment and classification. Our review draws heavily from *The Guide*. We strongly recommend that you obtain a copy.

Not everyone will agree with our assessment of the relative value of various violence prevention strategies. Many of the programs we have identified as "less effective"

have strong advocates. Few have been sufficiently evaluated to reach a firm and final conclusion about their usefulness. More evaluation research is needed.

Unfortunately, the support for generating high-quality evaluation research is weak. Federal agencies including the Office of Juvenile Justice and Delinquency Prevention (OJJDP), the National Institute of Justice (NIJ) and the National Center for Injury Prevention and Control at the Centers for Disease Control and Prevention (CDC) are interested in evaluating promising strategies, but the resources available to fund evaluations of violence prevention programs are meager. Many programs are evaluated for insufficient intervals of time (i.e., only one to three years).

That is why the Robert Wood Johnson Foundation's Urban Health Initiative is so important. Communities involved in this initiative are being encouraged to take risks, invest in efforts that have a long-term pay-off, and stick with them long enough to learn whether they succeed or fail. Thus, the potential for learning crucial lessons from the initiative's successes and failures is great.

Understanding the scope of the problem

Between 1975 and 1984, the rate of juvenile arrests for violent crime was relatively stable. Then, it began to climb sharply. Over the next 10 years (1985–1994), juvenile arrests for murder, robbery, motor vehicle theft and weapons violations far surpassed the growth in adult arrests for these crimes.

In 1994, the number of arrests of persons under the age of 18 exceeded 2.7 million. Juveniles committed 14 percent of all violent crimes and 25 percent of all property crimes that were cleared. This includes 10 percent of all murders, 13 percent of all aggravated assaults, 14 percent of all forcible rapes, 20 percent of all robberies, 21 percent of all burglaries, 25 percent of all motor vehicle thefts, 25 percent of all larceny thefts, and 48 percent of all arsons (Snyder 1996).

The growth in juvenile homicides has been particularly disturbing. The number of juvenile offenders arrested for murder in 1994 was three times the number arrested in 1985. Most of these cases involved the use of firearms. Although rates of non-firearm homicide declined slightly between 1985 and 1994, firearm homicides of young males tripled. Teen suicides with a firearm have increased as well. A teenage male in the United States today is more likely to die of a gunshot wound than all natural causes of death combined (Fingerhut, 1993).

The rapid rise of gun homicides of youth coincided with the growth of crack cocaine markets in the inner city (Blumstein 1995). Criminologists speculate that when drug dealers recruited and armed juvenile "runners," uninvolved youth in the neighborhood armed themselves in response. Between 1987 and 1994, juvenile arrest rates for weapons violations nearly doubled (Blumstein 1995, Snyder 1996). Today, young people report that guns are commonly carried and readily used (Ash 1996, Sheley and Wright 1993).

The increased availability of guns to youth has been matched by an increased willingness to use violence to achieve one's goals. Standing up for oneself, and using force to maintain "respect," are essential elements of what is known as the "code of the streets." For those who live by this code, it is unthinkable to walk away from a fight (Anderson 1994).

Violent confrontations are common in adolescence. If both parties are armed, the one who acts first usually gains a decided advantage. The realization that many youth on the street are carrying a weapon increases the potential for an immediate and exaggerated response to real or perceived threats (Roth 1994). Even trivial disputes can end in death when guns are involved (Kellermann 1994, Cook 1993).

Young males commit the bulk of juvenile crime and violence. Eighty-six percent of juvenile violent crime arrests and 75 percent of property crime arrests involve males.

Since most youth crime is committed against other youth, males are also more likely to be victims of violence than females. The only exceptions are the victimizations of rape and domestic abuse, both of which involve girls more often than boys (National Research Council 1993). Before the age of 13, boys and girls have an equally small risk of being murdered. By age 17, the risk of homicide among males is five times that of females.

Although girls are less often involved as perpetrators of violent crime, the rates of offending among girls are increasing faster than among boys (Snyder 1996). Between 1985 and 1994, female juvenile violent crime arrests more than doubled. In 1989, girls were much less likely than boys to carry a weapon to school. By 1993, girls reported carrying a weapon nearly as often as boys. Girls who carry a weapon more often carry a knife, box-cutter or some other cutting or piercing instrument. Boys are more likely to carry a gun (Centers for Disease Control and Prevention 1993).

Despite the changing rate and nature of juvenile violence, it is important to remember that *adults* are still responsible for the vast majority of crimes. This is particularly true of violent crimes. In 1994, adults committed 75 percent of the property crimes and 86 percent of the violent crimes. The rate of increase in juvenile crime has been higher, but adults are responsible for most of the recent growth in total number of violent and property crimes (Snyder 1996).

Adults facilitate many juvenile crimes as well. Although many young people benefit from the influence of a responsible, caring adult, others are led down a different path. The principal commodities of violence — drugs, alcohol, and firearms — are produced by adults, as are the media that glorify them (National Research Council 1993). Sometimes, adults take a direct role in encouraging juvenile violence. Three out of 10 juveniles who killed between 1980 and 1994 had an adult accomplice.

Although these statistics give cause for concern, it is important to keep the problem of youth violence in perspective. Most young males are not criminals, much less heartless "predators." In reality, young males are much more likely to be victims of violence than are most adults. Between 1987 and 1992, the rate of handgun crime against youths 16 to 19 years of age was almost three times higher than the national average (14.2 victimizations per 1,000 youths versus 4.9 per 1,000 persons of all ages). The rate of handgun crimes against children 12 to 15 years of age exceeded the annual rate of handgun crime overall (5.0 versus 4.9 per 1,000 persons). African-American males were victimized at three to four times the rate of whites of comparable age, and eight times the rate of the population at large (Rand 1994).

The current portrait of youth presented by the media is not grounded in statistical reality. The vast majority of young people do not carry weapons, do not deal drugs, do not join gangs and do not victimize their friends or neighborhoods. Less than one half of one percent of all juveniles aged 10 to 17 in the U.S. were arrested for a violent crime index offense in 1994. Most young people, like most adults, want nothing more than to lead their lives in peace.

The causes of violence are many. They will not be solved by simple measures or quick fixes. The multi-faceted nature of violence almost invariably frustrates simplistic approaches to the problem. Youth violence can be prevented, but efforts must start at an early age and be sustained over time. Early childhood experiences, the nature of a child's family, the influence of peers, the neighborhood and society are keys to solving the puzzle.

10

Programs that work

Prevention of unintended pregnancy

Babies born to teenage parents are at increased risk for a variety of health-threatening events, including physical, sexual and mental abuse, economic and educational depriva- tion, and neglect (Zabin 1993). The constellation of young parenthood, poverty, incon- sistent parenting styles and erratic supervision by a single parent/family challenged to make ends meet will put the child at increased risk in these areas, all of which have been linked to an increase in violent behavior (Widom 1992, Zabin 1995). The United States has the highest unintended teenage pregnancy rate of any western, industrialized nation. It has been estimated that 80% of all teen pregnancies and 57% of all pregnancies are un- intended (Brown 1995). Many adolescents become pregnant as a result of nonconsensual intercourse, itself a violent act (Dickerson 1995).

Teen pregnancy prevention programs were recently reviewed by the Institute of Medicine's Committee on Unintended Pregnancy (Brown 1995). Although there are lit- erally hundreds of programs operating in the United States, only 23 were judged by the Committee to have been properly evaluated using methodologically sound designs. These programs targeted a number of groups (middle to high school age, female and male, non- sexually active, sexually active, never been pregnant, currently pregnant and parenting) and were carried out in school, community and media settings. Eleven of the 23 evalua- tions demonstrated at least some positive outcomes (delay of first intercourse, increased use of contraceptives, delay of second pregnancy, increased education and employment). The goals and objectives of the rest of the programs do not appear to have been met, and the overall impact of the 23 programs was not clear. One project that demonstrated posi- tive outcomes is the Elmira Nurse Home Visiting Program, discussed later in this paper (section I.B.1).

Few programs have addressed the role of the male in unintended pregnancy, birth and parenting, although surveys suggest that males (even adolescent males) regard contra- ception as a shared responsibility (Brown 1995). Enforcement of child support require- ments appears to be a particularly promising avenue of policymaking. Boys and men who are expected and required to provide for at least the economic needs of any jointly- produced children appear to be more willing to actively and consistently employ contra- ceptive methods than those who are not required to do so (Brown 1995).

Infancy and early childhood intervention programs

Evaluation research suggests that preventive approaches applied between the prenatal period and age 6 reduce juvenile violence, delinquency and crime more effectively than

programs implemented later in life. Early intervention is key (OJJDP 1995, Greenwood 1995).

Home visitation

Family-related factors play an important role in the development of delinquency. Inadequate social support of parents is an important correlate of children's antisocial behavior (Dunst 1988). There has been a long history in the United States and in other countries of nurses visiting mothers and children in their homes. Interventions with families to reduce the risk of violence can take many forms. The most successful interventions are those that appear to affect more than one risk factor, or support different strengths in the family. Early childhood interventions that have achieved long-term reductions in antisocial behavior and delinquency include home visitors as an essential feature, along with early education (Berrueta-Clemens 1984, Schweinhart 1993, Johnson 1987, Lally 1988, Seitz 1985). In these programs, weekly to monthly home visits provided parenting information, emotional support, counseling and referrals to appropriate outside agencies. Long-term follow-up of visited children found they had lower rates of offending as teenagers (Berrueta-Clemens 1984, Seitz 1985), and less teacher-rated antisocial behavior than those who did not receive home visitation (Berrueta-Clemens 1984, Johnson 1987, Lally 1988, Seitz 1985).

The studies by Olds and colleagues (1986) of home visitors in Elmira, NY documented lower rates of child abuse and neglect in the intervention group, as well as a positive impact on the child's cognitive functioning; the follow-up period has not yet been long enough to ascertain the impact on teenage violence. The Prenatal/Early Infancy Project targeted an area with high rates of poverty and child abuse in the Appalachian region of New York State. Home visits by nurses began during pregnancy and continued until children were 2 years old. Mothers randomly selected for the intervention group were provided with health and parent education, job counseling, and linkage to social services. Efforts were made to involve the mothers' relatives and friends as well. Compared to mothers randomly assigned to be controls, mothers served by the program were more likely to graduate from high school, get a job, and delay subsequent pregnancy. The rate of verified child abuse was only 4 percent for program participants compared to 19 percent among controls (Olds 1986).

Parenting programs

Parenting practices are a key link in the causal chain leading to violence. Poor parenting in the forms of inappropriately harsh discipline, poor parental supervision, and lack of parental monitoring have been shown to be powerful predictors of later delinquency and violence (Olds 1986, Farrington 1991, McCord 1992, Patterson 1991 and 1992).

Parenting skills are not instinctive. These skills are learned behaviors based on individual parental experiences and the personal process of trial and error in raising children. Fortunately, the skills of parents who have had poor role models can be improved through training. Patterson and colleagues (1991, 1992) have developed programs to teach parents basic skills and have shown that they can be successful with even the most difficult children.

Other successful programs have combined parent training with additional interventions. Hawkins and colleagues (1991) combined a parent training program, "Catch 'em being good," with teacher training in proactive classroom management, cognitive social skills and interactive teaching methods. These programs, offered together, have been shown to decrease aggressive behavior in children, especially boys. A program of parent

12

training and teacher interventions to foster social skills and self-control in kindergarten-aged children decreased delinquent behavior at age 12 (Tremblay 1992). Effective, accessible parenting programs should be made available in all communities.

Early childhood education

Early education programs, by helping to ensure success in school, can have an important impact on the subsequent development of violent behavior. Early intervention programs appear to strengthen a child's bonds to school by improving school achievement through social reinforcement of the student role (Elliot 1979). One early intervention project, the Perry Preschool Program, was found to be effective for preventing violence (Berrueta-Clemens 1984, Schweinhart 1993). High-risk children enrolled in the program had less delinquent behavior at age 15. At age 19, 31 percent of program participants had been arrested for a crime, compared to 51 percent of controls. Participants also secured better employment and were less likely to require public assistance. The effects of the program persisted far longer than the initial effects on cognitive function at school entry.

The Syracuse Family Development Research Project coupled a home visitation component with parent training, child cognitive development activities, social support, linkage to social services, and a book-and-toy lending library. Educational child care and a parent organization were also provided. A long-term follow-up found that only 6 percent of program participants had a juvenile record by age 15, compared to 22 percent of controls. Program participants who had a criminal record had less serious offenses, and fewer offenses, than controls with a criminal record (Lally 1988). Considering the cost of delinquency (Greenwood 1995), preschool education is an inexpensive investment that should be made available to all children born in high-risk environments.

Teaching problem-solving skills

Research has shown that youth who engage in delinquent activity and violent behavior score lower on cognitive tests than peers who do not engage in such activity. (Henggeler 1989). A variety of reasons contribute to this pattern of development: individual variation, lack of cognitive stimulation due to inadequate parenting, poverty, and social isolation.

The ability to observe situations, collect and analyze information, identify consequences and choose alternative courses of action are learned skills that children must acquire to grow into competent adults. Social competence curricula aim to counteract anti-social behavior by teaching these skills in school or at home (Hawkins 1992).

Two lines of thought about the causes and development of adolescent delinquent behavior are prevalent in the literature. One is that youth who engage in violence and delinquency have not developed appropriate skills and engage in violence out of an inability (and resulting frustration) to solve problems and satisfy their needs in a more socially acceptable way (Richards and Dodge 1982, Platt 1973, Platt 1974, Kennedy 1984). The second holds that delinquent youth are very good at analyzing and interpreting behavior, but they employ skills in a non-socially sanctioned way. According to this view, delinquent youth live in a violent environment and have adapted to survive. In the views of these youth, crime and violence are justified if it helps them accomplish their goals (acquire goods, make money, get attention or "respect").

Research findings can be cited to support either position. In a study of the reasoning skills of delinquents, Hains and Ryan concluded that "delinquents did not evidence deficits in their knowledge of viable solutions to problems. Rather, they were less likely to recognize the need to consider these solutions fully" (Hains 1983). Dodge and collabora-

13

tors (Richards and Dodge 1982) completed a series of studies that address attribution bias on the part of aggressive youth. Their findings suggest that aggressive youth who are socially rejected are less skilled at interpreting the intentions of others and will attribute hostile intent where it does not exist. Aggressive tendencies may develop after youth experience violent treatment or witness violence against a family member (Widom 1992).

Examples of programs that address these issues include Interpersonal Cognitive Problem-Solving (ICPS) and Providing Alternative Thinking Strategies (PATHS). Both attempt to counter early antisocial behavior by encouraging cognitive development and teaching social skills. Short-term evaluations of both programs suggest that program participants have reduced behavior problems and improved problem-solving skills (Howell and Bilchik 1995, Shure 1988).

Marital and family therapy

Many problems with juvenile behavior can be traced to family discord, maladaptive parenting styles, and poor communication. Family therapy (i.e., working with multiple members of a family as a group) is costly, but there is evidence that it works. Two meta-analyses of family therapy programs suggest that this approach can produce moderate improvement in family functioning and reduce child behavioral problems (Shadish 1992, Hazelrigg 1987). A randomized trial of several family-centered approaches to juvenile delinquency administered by the Salt Lake County juvenile court found that behavioral family therapy produced better results than other strategies or no treatment at all. (Klein 1977) A pilot program administered by the Juvenile Court of Fulton County, Georgia, has shown promising results, but it needs further evaluation. All in all, family therapy appears to be a costly but effective approach to preventing juvenile delinquency (Howell and Bilchik 1995).

Innovative teaching and classroom organization

Schools have an enormous influence on the child's development and potential for success or for violence. Poor achievement in school is one of the best predictors of later delinquency and criminal behavior (Farrington 1993). Antisocial behavior on the part of a youth and the lack of willingness to comply with adult direction can lead to enormous problems in school, and is a key component of academic failure (Patterson 1992, Tremblay 1992, Utting 1993).

The educational milieu of a school can exert a significant effect on violent behavior. Some schools in high crime neighborhoods have relatively low delinquency rates, while others in low-crime areas have disproportionately high levels of delinquency. Various characteristics of a school, such as consistent discipline and shared standards or values, interact in a cumulative fashion to produce an "ethos" or set of expectations within a school. This ethos can either increase or decrease the risk of school failure, violence, and delinquency (Rutter 1979).

Educational strategies have been found to have measurable effects on subsequent behavior. Smaller classroom size, for example, has been found to have a modest impact on student reading achievement in kindergarten and first grade (Slavin 1990). However, beneficial effects have not been consistently identified in higher grades. Introduction of teacher's aides has also been found to produce modest effects (Slavin 1994). School systems should balance the costs of these interventions against their potential benefits (OJJDP 1995).

Ability grouping of students may improve academic achievement to a modest degree based on evaluations of these programs in early grades. However, ability grouping

has not been shown to improve academic achievement in later grades (Slavin 1990). Grouping students by ability can have negative effects as well, such as attaching a stigma and lowering self-expectations among students in lower groups. Non-promotion is a traditional response to students who have failed to make sufficient progress at a given grade level. Unfortunately, non-promotion has been found to have a negative effect on subsequent academic achievement, attendance, behavior, and attitudes towards school, above and beyond what would be predicted on the basis of lower intelligence and prior academic achievement (Holmes 1984).

A variety of classroom instructional strategies have been tried in the classroom in an attempt to directly influence behavior. In the "Good Behavior Game," teachers monitor groups of children who compete to see which group can achieve the best score by reducing episodes of disruptive behavior. Tangible rewards are provided to the group with the best score. The game is initially played for brief periods of time, then progressively lengthened. At one year follow-up, students randomly selected for the game had fewer behavior problems and were less shy than control students. Boys in the experimental group who were rated as aggressive in the first grade improved more than aggressive boys in the control group, even after controlling for first grade behavior (Kellam 1992).

The Seattle Social Development Project was designed to prevent delinquency and used a variety of proactive strategies for classroom management (Hawkins 1987). Using a school-based experimental design, the program was implemented in grades one through six in experimental schools and selected periods of grade seven in participating middle schools. Although initial effects appeared to be modest, students randomized to the intervention reported more socially acceptable behavior and had higher levels of academic achievement by the end of the sixth grade (Howell and Bilchik 1995).

A comprehensive school organization intervention developed by Cauce and colleagues has had striking success in fostering positive behavior and improving learning; it appears to work not because of the content of its curriculum, but because it changes the school climate from one of failure to one of success. Implemented in two poor, inner-city elementary schools in New Haven, Connecticut, the program integrated a planning and management team, a parent participation program, and a mental-health team to create a sense of community responsibility for parents, teachers and students. Arts and athletics were integrated into school activities. A quasi-experimental comparison to nonequivalent control schools suggests that the program improved parent involvement, test scores and student behavior (Cauce 1987). This program design should be implemented elsewhere to determine if the results are reproducible.

Supervised after-school recreation

After-school recreation programs seek to occupy children's time, give them a sense of belonging and impart good social values in an organized setting. They also provide opportunities for interaction with responsible, caring adults. Programs like the Boys and Girls Clubs are good examples of this approach.

"After-school" hours are a high-risk time for youth. Rates of juvenile offending during the hours of 2:00 to 6:00 p.m. are four times higher than during late-night/early morning "curfew hours" (LeBoef and Brennan 1996). Involving youth in organized sports and other activities gives children opportunities to develop friendships with other youth in a relatively safe setting. Programs of this sort are widely accepted by the public and parents alike.

Unfortunately, evaluations to date have not been clear-cut. Most have employed

15

quasi-experimental group designs with non-comparable control groups (OJJDP 1995). For example, an evaluation of a large after-school program in Ottawa, Ontario, suggests that programs can have substantial — albeit short-term — effects on rates of juvenile crime. Rates of juvenile offending in a housing complex where the intervention was applied fell by 75 percent, compared to a 67 percent increase in the comparison (control) project. However, the two projects differed in other respects that could have confounded results. Furthermore, reported differences in rates of juvenile crime narrowed considerably 16 months after the program was concluded (Jones 1989). This suggests that programs of this sort work by keeping youth occupied, rather than engendering long-term behavioral change.

Innovative policing

A growing number of police departments are modifying their traditionally reactive approach to law enforcement (i.e., answering 911 calls) to take a more proactive approach to crime control. Identification and suppression of crime "hot spots" is one example. Crime is not randomly dispersed in time or space. It is highly concentrated in identifiable neighborhoods and even places (e.g., certain bars or street corners). Through use of computer mapping, police resources can be more effectively deployed to counter such activity and restore a sense of safety in the neighborhood (Block 1991, Reiss 1993). In New York City, Police Commissioner Bratton applied this strategy to great effect (Bratton 1996). Proactive policing has been given a large share of the credit for New Yorkís recent decline in violent crime (Pooley 1996).

Targeting illegal carrying of firearms is another promising strategy. The Kansas City Police Department evaluated the impact of deploying a special unit to confiscate illegally carried firearms in a neighborhood plagued by high rates of gun-related violence. During two intervention periods when this unit was actively looking for illegally carried guns, firearm-related crime in the intervention neighborhood declined almost 50 percent. No such decline was noted in a control neighborhood a few miles away. There was little or no displacement of crime to surrounding neighborhoods (Sherman 1995).

A few years ago, the mayor of Cali, Colombia responded to a surge in the city's rate of homicide by banning the carrying of firearms on "high-homicide" weekends (i.e., paydays, holidays and election weekends). During these periods of time, the National Police established checkpoints and instituted other measures to confiscate illegally carried firearms. A subsequent evaluation of this policy revealed that the rate of homicide was significantly less on weekends when the policy was in effect compared to weekends when it was not in effect (Villaveces, 1996).

Obviously, any effort that involves confiscation of firearms has the potential to be controversial. Police engaged in this sort of activity must be carefully trained and rigorously monitored to ensure that searches are conducted in a constitutional manner. Community education is needed to increase the deterrence value of this strategy and engender neighborhood support. In Kansas City, officers went door to door in the intervention neighborhood before the program was put into effect (Sherman 1995). Controlled replications are needed before this strategy is put into widespread practice.

16

IV.

Less-effective programs

Many popular programs have not been found to be particularly effective when subjected to careful program evaluation. Some have been found to be counter-productive. Although many of these programs have positive features, they have not been found to produce sufficient benefit to justify their cost. Communities should think carefully before adopting these programs. If one or more are selected, they should be evaluated on a pilot basis before being implemented community-wide.

Individual-level interventions

Mentoring programs

One of the most common characteristics of youth who avoid lifestyles and situations with high levels of violence is a predictable, consistent relationship with a stable, competent adult (Howell and Bilchik 1995). Mentoring programs attempt to duplicate this kind of relationship for at-risk youth by recruiting adults to meet with a young person on a regular basis to be a good influence and talk over problems.

The majority of mentoring programs have not been rigorously evaluated. Most program reports recommend an evaluation component, but few report the results of any evaluation. Published evaluations are almost exclusively formative, or process evaluations, and concentrate on questions of implementation and "customer satisfaction" (e.g., did the adult/youngster involved say she/he thought the program was worthwhile, was an appropriate adult recruited for each child, did the adults meet with the youth the number of times they agreed to meet with them, etc.). Most acknowledge that the implementation and maintenance of a mentoring program is labor intensive. Specific challenges include making an appropriate match between the adult and the child, maintaining a schedule of regular contact and defining the nature and expectations of a mentoring relationship.

Although many participating adults and youth report satisfaction with their relationships, it is unclear whether or not the time-limited, sporadic nature of these relationships has much of an impact on the life of at-risk youth. OJJDP reviewed 10 mentoring programs and found that those which feature unconditionally and uncritically supportive relationships do not work (Howell and Bilchik 1995). One program that included behavior modification techniques may have been beneficial by improving school attendance (Fo 1975). No mentoring program has been found to reduce delinquency. In fact, some have been linked to an increased rate of delinquency in the intervention group (Howell and Bilchik 1995).

Violence-prevention curricula for adolescents

Violence is more common in grades 6 through 8 than in grades 9 through 12, but the

13

consequences of violence are more serious in the higher grades. Unfortunately, violence-prevention curricula targeting older adolescents (age 15 and older) have not been found to be particularly effective because behavior patterns are already well-entrenched by the ninth or tenth grade (Webster 1993). More recent efforts have been directed at younger age groups. To be effective, violence prevention education should be initiated at an early age, when the child's behavior is more malleable, and continued throughout adolescence.

Conflict resolution and violence-prevention curricula are designed to improve students' social, problem solving, and anger-management skills, promote beliefs favorable to nonviolence, and increase knowledge about conflict and violence (Brewer 1995). These programs differ from social competence curricula such as Interpersonal Cognitive Problem Solving in that they are specifically designed to reduce interpersonal conflict and violence. Few of these curricula have been evaluated in controlled studies, and those that have been evaluated have yielded mixed results. Four studies that assessed students' aggressive or violent behavior found modest evidence of program impact (Bretherton 1993, Hammond 1991, Marvel 1993, Webster 1993) primarily by improving self-reported violent behavior. However, none of the programs has achieved significant changes in attitudes towards violence, and none has reported reduced rates of serious interpersonal violence.

One program, the Second Step violence prevention curriculum developed by the Committee for Children in Seattle, has been rigorously evaluated. In a large randomized controlled trial, Grossman, et al. (1996) found that the curriculum decreased physically aggressive and negative behavior in second and third grade children. The duration of this effect, and its implications for violent behavior in later life, are unknown.

Peer mediation

Peer mediation is another popular but unproven approach. These programs are usually implemented in elementary or secondary schools, and are often offered in conjunction with conflict resolution curricula. Students involved in peer mediation programs agree to have disputes mediated by a peer who has been trained to help both parties analyze the problem and come to a nonviolent resolution. The process is designed to reach consensus, maintain confidentiality, and avoid blame.

Many of these programs have been rated favorably by participants, school officials and disputants. Although they are popular, there is little evidence that they work. A 1989 review of 14 evaluations found that none had used a randomized design, and many lacked a control group (Lam 1989). One of the few controlled studies that has been conducted to date found no effects on school climate, rates of student retention, suspension, dismissal or attendance (Araki 1989).

Two quasi-experimental evaluations suggest that peer-mediation may have a positive impact on student knowledge and attitudes (Howell and Bilchik, 1995). Only one has demonstrated a positive impact on behavior. In 1992, Tolson, McDonald and Moriarty published the results of an evaluation of a peer mediation program in a predominantly middle-class suburban high school with a diverse student body. They found that students who were randomly assigned to peer mediation were less likely to be referred back to the assistant dean within two and a half months of the original incident than students referred for traditional discipline (warnings, demerits, or suspensions). Long-term follow up was not reported.

18

Peer counseling

A youth's peer group can exert a powerful influence on her/his behavior. Youth who socialize by choice or default with peers already engaged in violent, delinquent or criminal behavior are more likely to engage in this kind of behavior. To counter this influence, group-oriented programs have proliferated in recent years. Most have been based on McCorkle, Elias and Bixby's Guided Group Interaction (GGI) approach (McCorkle 1957) and have been implemented in treatment rather than preventive settings. Although there have been outcome studies of many of these programs, most have been poorly designed. The available evidence from randomized trials and quasi-experimental evaluations suggests that peer counseling in elementary and secondary schools has no measurable benefit, and may even be counterproductive (Gottfriedson 1987). It is not yet clear if the concept is flawed or if these programs have been implemented in an ineffective manner.

The results of an evaluation of a peer group program in St. Louis suggest that youth exhibiting antisocial behavior will improve if they are engaged in activities with prosocial youth that are directed by an experienced leader (Feldman 1983). The establishment of a new, positive peer group (or at minimum, a parallel group) from which the youth can get social reinforcement, affirmation and reward is critical.

Education to prevent drug abuse

The link between drug abuse and violent behavior is well-established. Project DARE (Drug Abuse Resistance Education) is the most prevalent school-based drug abuse prevention program in the United States. Unfortunately, there is little evidence that it is effective. A long-term study of the program in 36 schools in Illinois found only limited impact of the program immediately after the intervention, and no evidence of a sustained benefit over time (Ennett 1994). DARE also had no effect on peer resistance skills. Other evaluations of DARE found that the short-term effectiveness of the program is limited, and generally less than the effectiveness associated with more interactive prevention programs (Ennett 1994).

Vocational training and employment programs

Youth employment and vocational training programs seek to provide youth with a sense of accomplishment, a steady income, hope for future employment, and a reason to continue their education. Most attempt to reduce risk factors for delinquency, such as early school failure and rebelliousness, and reinforce protective factors, such as gainful employment and a sense of accomplishment.

Evaluations of these programs have yielded mixed results. Effectiveness appears to be largely dependent on whether training includes an intensive educational component or not. Many programs have failed to achieve their stated goals (Hackler 1966, Hackler 1975). A few have been found to be counterproductive.

One educational and vocational intervention aimed at socially and educationally maladjusted youth found slightly higher arrest rates among participants compared to comparison students. Non-consenting youth (youth who did not participate in the program) actually had a higher graduation rate than youth who participated in the program or comparison youth. The evaluators noted that participants could not receive a diploma, and some may have found participation stigmatizing (Ahlstrom 1982).

An evaluation of programs funded under Title II-A of the Job Training Partnership Act found that rates of arrest among male participants who had no criminal record prior to random assignment to the program were higher than control youth who were not in

the program (26 percent versus 19 percent). A cost-benefit analysis suggested that the program was associated with greater costs than benefits to program participants and society as a whole.

Other programs have achieved more positive effects. Mallar, et al. (1982) evaluated the Job Corps, a residential program for out-of-school youth between the ages of 14 and 21. A random sample of program participants from 61 sites were compared to Job Corps eligible youth from sites where participation was low. Program components included remedial education, job skills and health care. Compared to controls, Job Corps participants were five times more likely to earn a high school diploma or GED. The program was also associated with sustained reductions in the rate of delinquency. However, since subjects were not randomly selected, it is unclear to what degree these differences were due to the program and which were due to the effect of self-selection.

Cave and colleagues evaluated JOBSTART, an employment program for low-income dropouts aged 17 to 21. Thirteen sites were evaluated across the country, and eligible youth were randomly assigned to intervention or control groups. The program emphasized basic academic skills, job-training and various combinations of family support services (e.g., transportation, child care, mentoring, counseling). A greater degree of educational achievement (diploma or GED) was noted among JOBSTART participants compared to controls, and lower rates of criminal offending were noted for the first year after random assignment. Unfortunately, the effect did not persist on four year follow-up. When records were checked again, it was determined that 38 percent of both experimental and control youth with no pre-program offenses had been arrested at least once (Cave 1990).

The Office of Juvenile Justice and Delinquency Prevention has concluded that most of these programs could not demonstrate lasting benefits (Howell and Bilchik 1995). Positive effects on employment and earnings rarely persist beyond participation in the program. Programs that replace school work with vocational training do not improve educational outcomes. Of nine programs that specifically addressed crime and delinquency prevention, six were found to have no effect and one resulted in an increase in criminal offending. Two (Mallar 1982, Cave 1990) had positive effects, most of which were short term.

Community-level interventions
Community-level programs enjoy widespread support, but most have not produced consistent results when subjected to careful program evaluation.

Neighborhood "cleanups"
Neighborhood characteristics can exert a profound influence on rates of crime, violence and juvenile delinquency (Sampson 1985). Several studies suggest that rates of crime and violence are directly related to levels of poverty, unemployment, and social disorganization in the neighborhood. Graffiti, vandalism, public drinking and prostitution signal a loss of neighborhood control that may result in an increase in crime (Skogan 1991). Criminals assume that neighbors who are indifferent to their surroundings will be unlikely to confront strangers, intervene in a crime or call the police. Unsafe neighborhoods are characterized by anonymity, weak control of public space, limited participation in local organizations, and groups of unsupervised youth (Sampson 1985).

Density of housing and population mobility are important factors in explaining neighborhood rates of violent crime (Lacayo 1996, Roncek 1981) and population turn-

over impairs a neighborhood's ability to control juvenile delinquency (Block 1979). Poor neighborhoods with high rates of population mobility often have substantially higher rates of violent crime (Block 1979, Sampson 1985, Sampson 1995); the same effect is not noted in more affluent areas (Smith 1988). Large, multi-unit housing complexes increase anonymity and decrease the likelihood that neighbors will look out for each other (Roncek 1981). A large percentage of apartments in multi-unit housing has been linked to high rates of crime in Cleveland and San Diego (Sampson 1995).

Safe communities (in contrast) are characterized by strong, locally based social networks, stable populations, neighborhood control of public spaces, and shared supervision of neighborhood youth. To capitalize on these characteristics, community-level interventions seek to prevent or reduce violence by modifying the neighborhoods in which it occurs. Some involve redirecting traditional criminal justice activities, such as community policing. Others involve "non-crime" strategies like sponsoring after-school activities for youth, promotion of neighborhood clean-ups, and economic development. Community "cleanups" of graffiti, trash, needles and crack vials can promote a climate of safety and order. Neighborhood-based cleanups have been shown to increase perceptions of safety (Rosenbaum 1991).

Crime breeds fear, and fear drives business from neighborhoods with rising rates of crime. When businesses relocate to the suburbs, opportunities for legitimate employment are decreased. Erosion of the tax base due to unemployment eventually leads to a reduction of municipal services and decreased support for public education. These, in turn, contribute to further deterioration in the social and physical condition of poor communities (Skogan 1991, Wallace 1990). Improving economic and social conditions may discourage crime (Sampson 1995). "Non-crime" policies such as zoning, provision of municipal services, tax incentives for new business and other strategies to promote economic development may play a crucial role in reversing the downward spiral of low income, high crime areas.

High-crime neighborhoods must organize to effectively communicate their concerns. Many decisions that profoundly influence quality of life are made by agencies and officials residing outside the affected neighborhoods (Sampson 1995). Unstable or disorganized communities cannot defend their interests against competing agendas.

Participation in neighborhood organizations can strengthen social ties between families. Examples of activities include forming citizen patrols to provide safe corridors to and from school, picketing crack houses, and organizing a neighborhood "night out."

Community mobilization strategies have been evaluated in a number of settings, mostly involving non-equivalent neighborhood comparisons (Howell and Bilchik 1995). Interventions of this sort have generally been associated with improved community perceptions (less perceived crime and disorder, greater perceived police presence). However, most have failed to produce significant decreases in neighborhood crime rates or self-reports of victimization (Wycoff 1985, Rosenbaum 1986, Lindsay 1986).

Juvenile curfews
Public curfews have been imposed periodically through the nation's history. Most are targeted toward youth under 16 years of age, and extend from 11:00 p.m. to 6:00 a.m. on school days, and from midnight to 6:00 a.m. on non-school days. Usually, exceptions are made for juveniles escorted by an adult, travel to or from work, emergencies, school or church activities and other special circumstances. Violations generally result in a parental fine of $75 to $500 (LeBoef 1996).

Curfew ordinances must pass a two-pronged test to survive a constitutional challenge. Local jurisdictions must demonstrate that 1) there is a compelling state interest in imposing the curfew, and 2) that the ordinance is narrowly tailored to achieve its objective (enhancing public safety).

Communities enacting juvenile curfews have reported reductions in crime ranging from 10 percent to 27 percent during curfew hours. Most have relied on simple before-after comparisons that do not take into account other changes in the community that may have coincided with curfew effects. The impact of curfews on overall rates of juvenile violence is less clear. Analysis of juvenile crime data from South Carolina suggests that the per-hour rate of juvenile offending in the "after-school" hours of 2:00 to 6:00 p.m. may be four times greater than the rate of juvenile crime during late night "curfew" hours. However, large cities like Dallas report that the majority of violent juvenile crimes (rapes, robberies, aggravated assaults and homicides) occur between 10:00 p.m. and 1:00 a.m. (LeBoef 1996). Much more must be known before we can confidently predict whether curfews are worth the financial and social cost.

Gun buy-backs

The rising rate of gun-related violence has prompted a number of interventions to reduce the availability of firearms, particularly to juveniles (Roth 1994). Gun "buy backs" have been tried in many communities in an effort to reduce the prevalence of readily accessible firearms. In each instance, citizens are asked to turn in firearms in exchange for cash, toys, concert tickets or some other item of value.

Some buy-backs have collected an impressive number of firearms. They can also generate substantial publicity. Eighty-six percent of respondents to a public opinion poll were aware of a buy-back program in Seattle (Callahan 1994). More than half believed the program would "remove guns from the streets of Seattle." A majority also believed that the program would reduce firearm injuries. A solid majority of both gun owners and non-gun owners believed that public funds should be used to support the program.

Despite this enthusiasm, there is no evidence that buy-backs reduce crime or violence. The rate of gun robberies, assaults, suicides and homicides in Seattle did not decline in the six months following the buy-back program (Callahan 1994). Similarly disappointing effects were noted in St. Louis.

It is possible that buy-back programs are not successful because the guns that are turned in are generally "low risk" firearms that are not in active circulation. It also seems clear that the quantity of "old guns" that are turned in is swamped by the number of "new guns" that are acquired in the same period of time. A survey of households in metropolitan Atlanta (recently the scene of a number of highly publicized gun buy-backs) revealed that less than half of one percent reported participating in a buy-back during the preceding year. Ten percent had acquired a firearm during the same interval of time (Kellermann and Fuqua-Whitley, 1995).

"Anti-violence" advertising campaigns

A variety of organizations have sponsored public-education campaigns to promote violence prevention (e.g., 100 Black Men, "Operation Peace" in Philadelphia). Several local police departments have implemented public-information campaigns to reduce gun violence. One such program in Charlotte did encourage a number of citizens to lock up their guns to reduce theft, but it was otherwise unsuccessful in promoting firearm safety (Vogel 1968). The Seattle Police Department has placed inserts in public-utility bills to encourage homeowners to store their guns safely. It is not known if this program had any effect.

Media campaigns to promote safe and responsible behavior are appealing. Unfortunately, few have been found to be effective. Robertson and colleagues measured the impact of a saturation advertising campaign to promote the use of safety belts in a city served by two cable systems: one system aired more than 1000 high-quality promotional spots; the other aired none. Subsequent observation revealed no difference in the rate of safety belt use among subscribers of either system (Robertson 1981).

Rivara has suggested that the impact of safety campaigns is blunted by attenuation of effect (National Committee for Injury Prevention and Control 1989). No matter how powerful and repetitive a safety message may be, some people will never encounter it. Among those who see or hear the message, some will reject it. Among those who accept the message as true, some will not be sufficiently motivated to change their behavior. Among those who change their behavior, some will lapse back into old habits over time and others will fail to follow the message on a consistent basis.

There are several reasons why media campaigns to promote violence prevention are unlikely to be effective. First, the group most likely to be injured or killed (young males) is also the group most resistant to behavioral change (National Committee for Injury Prevention and Control 1989). Second, anti-violence messages must compete with a huge number of explicit and subliminal messages that glorify aggression, violence and the use of weapons. Third, youth receive mixed signals from authority figures. Although most states take a hard line on gun-carrying by youth, many have made it easier for adults to carry a handgun for protection. Juveniles may reason that if an adult needs to carry a gun for protection, they do, too (Ash 1996).

The most significant barrier to effectiveness may well be the "code of the streets." Anderson's ethnographic research suggests that in inner-city neighborhoods many young people consider maintenance of "respect" through aggressive behavior or violence as more important than life itself (Anderson 1994). However, attitudes like these are not limited to the inner city. Kellermann and colleagues interviewed white and African-American youth in metropolitan Atlanta, and found that none identified "just walk away" as an acceptable option for responding to a challenge or threat. Most dismissed anti-violence ads and celebrity testimonials as naive or self-serving; several noted that they were exposed to so much media that no message is perceived as relevant or genuine (Kellermann and Fuqua-Whitley 1995).

Untested strategies

Family literacy programs

Low bonding to school has been identified as a risk factor in youth for the development of violent behavior (Hawkins 1987). Recent efforts to decrease the risk of school failure have been aimed at improving literacy through interventions in the family, especially during the child's infancy, toddlerhood and preschool years. For example, the "Beginning with Books" program gives children's books to families during the first years of life. The program has resulted in more literacy experiences for children in their homes and higher reading abilities in early elementary school (Bean 1990). These interventions have been adopted by many clinics, with favorable reaction from families and children (Needleman 1991).

Firearm safety training

School-based education about the dangers of firearms has been promoted by both the National Rifle Association (Eddie the Eagle for young children and Gun Safety Instruction for grades three through six) and the Center to Prevent Handgun Violence (Kids + Guns = A Deadly Equation, Straight Talk About Risks). These two approaches have differences in emphasis; neither has been adequately evaluated. Whether teaching school children about guns will promote responsible behavior or youthful experimentation is a matter of speculation (Ash 1996).

Disrupting illegal gun trafficking to youth

Experts have recommended that priority be given to disrupting illegal gun markets (Cook 1996, Roth 1994, Kennedy 1994). This may be a particularly useful way to reduce juvenile access to guns (Roth 1994, Cook 1996). In Boston, systematic tracing of guns taken from juveniles and subsequent arrest of adult suppliers has been credited with producing a substantial reduction in gun violence in one high-crime neighborhood (Butterfield 1996). A multi-center effort to replicate this finding is currently being implemented in Baltimore, Richmond and 15 other cities. The National Institute of Justice is expected to fund an evaluation of this effort.

Support groups for victims

Anecdotal reports suggest that grass roots efforts like Atlanta's "Mothers of Murdered Sons" (MOMS) or the Detroit-based "Save Our Sons and Daughters" (SOSAD) may be effective to help grieving parents cope with their loss, mobilize the community and motivate young people to consider the consequences of violence. Youth support groups for the

survivors of juvenile violence is another promising idea (e.g., "Kids Alive and Loved"). Preliminary research by Thomas and colleagues suggests that the siblings and friends of homicide victims, as well as the survivors and witnesses of serious interpersonal violence subsequently have serious emotional and psychiatric sequellae. In the absence of help, many young people fall into a cycle of retaliation, revenge or self-destructive behavior. Victim and survivor programs are worthy of support and careful evaluation.

25

VI. Conclusion

Many of the programs we reviewed have yielded disappointing results when subjected to a controlled evaluation. Others show promise, but they have been incompletely evaluated. Some appear to work. Few yield quick results.

In writing this review, we chose to focus our attention on preventive strategies. Although it can be argued that tough sentencing is preventive through deterrence (reducing crime through fear of sanctions) or incapacitation (reducing crime by incarcerating violent offenders from society for sustained periods of time), there is little evidence that either strategy is particularly effective with juveniles. Nonetheless, many politicians and a growing number of citizens are calling for harsh sentencing of violent juvenile offenders. Although this may achieve short-term reductions in juvenile crime and violence, the cost will be high (Howell and Bilchik 1995, Reiss 1993, Greenwood 1995). Furthermore, this strategy is unlikely to produce lasting results if the social and economic conditions that breed juvenile crime and violence remain unchanged (Reiss 1993, Wilson 1994).

If cities involved in the Robert Wood Johnson Foundation's Urban Health Initiative identify juvenile violence as a priority area, we hope that they adopt a variety of strategies. More importantly, we hope that these efforts are evaluated over time. Much remains to be learned.

Over the next two decades, the population of the United States will age considerably as the "baby boom" generation reaches retirement and beyond. The work force that will be called upon to support these "senior citizens" will be much smaller (proportionately) than the one we have today. Where are these workers today? They are sitting in our schools and playing in our streets. They are our children and our future.

26

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28

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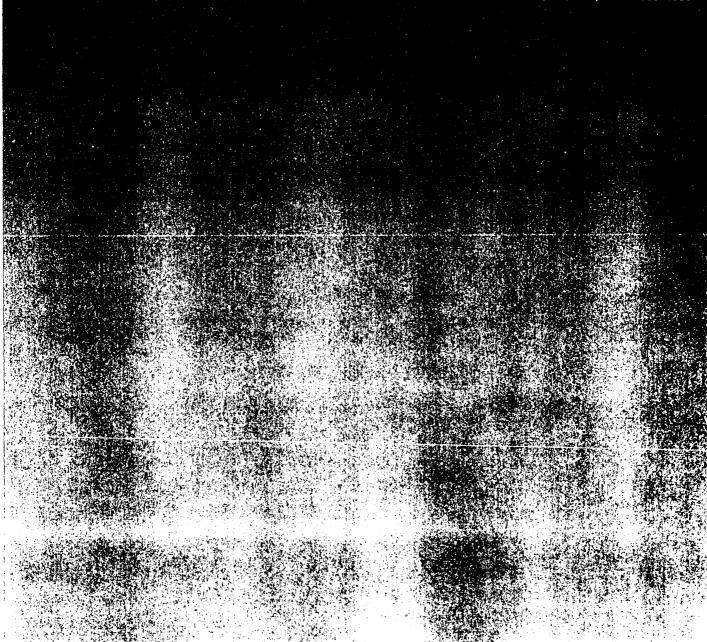
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