Preventing Youth Violence Perpetration Among Girls

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Abstract

In the last 10 years, several reviews of research on violence among girls have been conducted. This research helps to determine the extent of girls’ use of violence however, it has not been translated into effective prevention programs for girls. This article reviews the research on risk and protective factors associated with violence, with particular attention on factors unique to girls or shared between boys and girls. Individual risk factors for youth violence include hyperactivity/inattention/impulsivity, risk taking/sensation seeking, low academic achievement, exposure to stress and victimization, and early puberty. Parent-child relationships/parental monitoring and supervision, parent criminal and antisocial behavior, and family conflicts and instability have been found to be relationship-level risk factors. Peer risk factors include deviant peer affiliation and gang membership. Risk factors at the community level include economic deprivation; community disorganization; the availability of drugs, alcohol, and firearms; and neighborhood crime. This review also includes a description of program effects for girls within the Model and Promising Blueprints for Violence Prevention Initiative programs. Very few evaluations have examined program effectiveness in preventing violence among girls. More evaluation research is needed to determine if evidence-based programs have positive impact on reducing violence and related risk factors among girls.

Introduction

Rates of youth violence (YV) resulting in homicide have generally declined in most regions of the United States in the past 15 years, but rates of violence perpetration and associated injuries among youth remain unacceptably high. For instance, nearly 700,000 violence-related injuries to youth aged 10–24 were treated in U.S. emergency departments in 2008.1 There are also substantial racial and socioeconomic disparities in violence among youth. Homicide is the leading cause of death among African American youth aged 10–24, the second leading cause of death for Hispanic youth, the third leading cause of death for American Indian, Alaska Native, and Asian/Pacific Islander youth, and the fourth leading cause of death for non-Hispanic white youth.1 Youth who are victims of serious violence or who witness violence in their communities suffer many consequences, including serious physical injuries and emotional maladjustment, and may suffer long-term health problems associated with the effects of such exposure.2,3 YV also affects the health of entire communities by increasing healthcare costs, decreasing property values, and disrupting social services.4

The field of YV prevention has made tremendous strides in identifying key factors that place youth at increased risk for perpetrating violence.5,6 In addition, more recent research has begun to document factors that have buffering or protective effects for youth,7-9 and there is a substantial literature that has identified programs, strategies, and policies that are effective or promising in preventing YV.10,11 The literature on risk and protective factors and on effective prevention approaches provides valuable information that can guide communities to effectively plan and implement evidence-based strategies for violence prevention. The majority of this research, however, has focused on boys as the key risk group in perpetrating violence. The main reason for this is that the majority of YV is perpetrated by boys.12 For example, data from the FBI’s Uniform Crime Reports in 2008 indicate that males accounted for 93% of juvenile arrests for murder and 83% of juvenile arrests for all violent crimes.13 These patterns, although less dramatic, are also present for less serious forms of violence. In a 2009 study of high school youth, 39.9% of males compared to 22.9% of females reported being in a physical fight during the previous 12 months. Seven percent of females reported
carrying a weapon during the previous 12 months, and 27.1% of males did. These data, combined with the broader literature on trends and risk factors for girls’ violence, indicate that although girls constitute a minority of perpetrators, they engage in violence at substantial rates, particularly in high-risk communities.

Because most of the risk and protective factors research has focused on male perpetrators, the data on whether these factors also predict girls’ violence need to be examined. Girls are often included in universal prevention strategies, yet little is known about whether these strategies are effective at preventing girls’ violent behavior. The focus of this article is to review the literature on youth violence as a public health issue among girls. First, an overview of the public health approach to violence prevention is provided. Then, prevalence data are presented to address rates and trends in violence perpetration among girls. The literature on risk and protective factors that are unique to girls or shared between boys and girls is summarized. Finally, research on evidence-based prevention programs is examined to determine the extent to which impacts on girls’ delinquent and violent behaviors have been evaluated. By using programmatic approaches that are most likely to address risk factors for girls, the unique needs of girls can be better taken into account, and efforts for violence prevention can be strengthened.

The Division of Violence Prevention (DVP) in the National Center for Injury Prevention and Control at the Centers for Disease Control and Prevention (CDC) approaches violence prevention through a public health lens. DVP’s mission is to prevent injury, premature death, disability, and other consequences of violence and to reduce the human suffering and medical costs resulting from violence so that people can reach their full potential. Our niche includes a focus on primary prevention (preventing violence before it occurs), developing a rigorous science base, using a population approach, and taking a cross-cutting perspective that leverages the expertise of multiple sectors and disciplines.

The public health approach to violence prevention includes describing and monitoring the problem of violence, identifying factors that place people at risk for or protect people from experiencing violence, developing and evaluating preventive interventions, and assuring widespread adoption of those interventions. The public health approach provides a useful framework for addressing the relevant issues to be considered in preventing violence and delinquency among girls. The steps involve (1) defining the problem, (2) identifying risk and protective factors, (3) developing and testing prevention strategies, and (4) ensuring widespread adoption. These steps are used as a framework for examining the public health issue of girls’ violence.

Defining the Problem of Girls’ Violence

The first step in the public health approach involves defining the problem. In considering girls’ violence, we must address whether there are substantial rates of such behaviors among girls and how those behaviors differ in form or prevalence from those for boys. In essence, we must ask: To what extent is violence a public health issue for girls? Prevalence data from epidemiologic and nationally representative samples can address this question. Several data sources indicate recent increases in rates of girls’ participation in violent offending over time. Rates of youth violence overall have declined over the past 20 years, but data suggest that rates for female offending have increased. For example, data from the Federal Bureau of Investigation’s Uniform Crime Reports (UCR) show girls’ rates increasing or decreasing less steeply than boys’ rates between 1999 and 2008 for several indicators of violent crime, including arrests for simple assault, aggravated assaults, and arrests for the Violent Crime Index (which includes homicide, forcible rape, robbery, and aggravated assault). However, arrest data may be sensitive to recent changes in policies for classifying assaults and an increased willingness of law enforcement to arrest girls. Self-report data of violent perpetration suggest that trends in rates for girls and boys were relatively stable and similar over the past 25 years; rates for both sexes increased and declined in similar ways. Therefore, although administrative data reflect increases in rates of violent crime among girls, self-report data suggest that the gender gap in violence is stable. More research is needed to examine possible explanations for the discrepancies in rates, including examining whether the narrowing of the gap seen in arrest data reflects changes in policies and practices related to arrests or whether discrepancies between arrest and self-report data suggest discrepancies in sex differences for more serious vs. less serious forms of violence.

Although these findings indicate that data showing increases in arrests for violent crimes for girls may be due to changes in criminal justice policies and procedures, females nonetheless perpetrate violence at substantial rates. For example, 15% of youth who reported high frequency offending (defined as five or more incidents) on the Assault Index (i.e., hitting an instructor/supervisor, fighting at school/work, and hurting someone badly in a fight) in the Monitoring the Future study were girls. For less frequent or minor reported behaviors on the Assault Index, 35% of perpetrators were girls.

Although it is unquestionable that boys perpetrate violence at substantially higher rates, girls nonetheless engage in violent behavior at rates that are serious enough to warrant consideration. In fact, for some forms of violence, girls may perpetrate violence at equal or higher rates than boys. Research on peer aggression and bullying has shown some sex differences in rates of overt and indirect aggression. One study found that relatively equal numbers of boys (73%) and girls (78%) were classified as nonaggressive, however, 17% of girls and only 2% of boys were classified as relationally aggressive (e.g., social exclusion from a peer group, giving someone the silent treatment, threatening to stop being friends). Although these forms of violence do not have the same likelihood of causing injury, disability, and mortality as does violence more typically perpetrated by boys, there are nonetheless serious consequences and negative health effects of these forms of violence for the victims, including depression, anxiety, poor school performance, and suicide attempts.

Risk and Protective Factors for Girls’ Violence

The second phase in the public health approach involves identifying risk and protective factors for violence. DVP’s work in violence prevention emphasizes and relies on the social-ecologic model, recognizing the importance of
individual, relationship, community, and societal factors in understanding and preventing violence.\textsuperscript{15} This model elucidates factors that influence violence and the risk factors at each level of the social ecology that can be addressed through prevention strategies. The social-ecologic model considers the complex interplay between factors at different levels and highlights opportunities for prevention. The four inter-connected levels have mutual and interacting influence, while representing separate but complementary avenues for prevention. One of the key issues in considering risk and protective factors for violence among girls is understanding the role of risk factors that confer unique risk for girls compared to boys. There is a rich and extensive literature examining risk and protective factors for violent behavior; however, much of this work has focused exclusively on males.\textsuperscript{24,25} When samples have included females, effects are typically not examined separately by sex, so it is not possible to identify potential sex differences in the relationships between risk factors and violence.\textsuperscript{26,27} Indeed, given the much larger prevalence of violence among boys, it is highly likely that in many studies the larger proportion of boys' violent behavior drives significant effects. This issue is critical to understanding the phenomena of violence among girls and in gaining an accurate understanding of the risk and protective factors that are optimal targets for prevention efforts. We now review the factors that are most prominent in the literature, with a particular focus on longitudinal studies that can document temporal relationships between risk and protective factors and later violence. Most of this literature has examined longitudinal risk factors in mixed samples or for boys in particular, and longitudinal studies examining risk factors among girls are scarce. We review the literature on risk and protective factors overall, emphasizing longitudinal findings. Where possible, we highlight research that has documented differential findings for girls and boys.

Another key issue in reviewing the literature on risk and protective factors for violence involves the definition and measurement of violence used in the literature. Research on violence and the development of violence sometimes has focused on the broader construct of juvenile delinquency. Juvenile delinquency includes crimes against persons, property, and public order, as well as drug offenses, when juveniles commit such acts. Violent behavior is one form of delinquency. Therefore, there is some degree of definitional overlap in violence and delinquency. Furthermore, the methods that are frequently used to assess violent behavior in research involve using scales that measure violence within the broader construct of delinquency. For example, common measures of violent behavior include several violence items as well as nonviolent delinquency items (such as drug selling and shoplifting). Studies frequently aggregate data from such measures into one broader delinquency measure. Likewise, research that uses official youth crime data frequently does not distinguish between violent crime and other crimes. Therefore, in reviewing much of the literature it is not possible to determine if risk and protective factors are predictive of violence specifically if violence is assessed within the larger delinquency construct.

Although the primary focus of this article is to examine violent behavior among girls, it is not possible to conduct a thorough review of the violence literature without including the literature on delinquency, as more can be understood about risk factors, prevention strategies, and sex differences when both violence and delinquency are examined. For these reasons, we review the literature on risk and protective factors for violence and delinquency, where applicable. In summarizing the literature, we specify findings specific to violence when findings are about violence outcomes only but indicate violence and delinquency either when the outcomes are combined in the literature or where it is not possible to distinguish the specific nature of the findings.

**Individual factors**

An extensive body of research has documented factors at the individual level that place youth at increased risk for violence and delinquency.\textsuperscript{5,26} A number of longitudinal studies have documented predictors in childhood and adolescence that predate the onset of violent behavior; most of this literature has examined longitudinal risk factors in mixed samples or for boys in particular. Prospective longitudinal studies of large community samples allow for greater assurance that risk factors are indeed temporally predictive of violent and delinquent behavior. Longitudinal studies have identified a large number of individual factors, including social information processing and hostile attributional bias,\textsuperscript{29,30} empathy,\textsuperscript{21} and childhood temperament.\textsuperscript{32} Given space limitations, we focus on those factors that have been examined in multiple samples, have been found consistently to predict violent (or delinquent) behavior, and have demonstrated the strongest longitudinal relationships. These include hyperactivity/inattention/impulsivity, risk taking/sensation seeking, low academic achievement, exposure to stress and victimization, and early puberty.

Hyperactivity, inattention, and impulsive behavior are crucial characteristics in the development of violent behavior. Meta-analyses and systematic reviews have demonstrated strong, consistent effects of traits including hyperactivity, impulse control problems, and attention deficits on violence.\textsuperscript{5,33,34} These findings have been consistently documented in male samples, and there are substantial sex differences in the prevalence of problems with hyperactivity/inattention/impulsivity, with girls experiencing substantially lower rates of such problems.\textsuperscript{35,36} However, studies that used girls-only samples or that analyzed effects for girls specifically also documented a substantial relationship between hyperactivity/inattention/impulsivity and later violence and delinquency.\textsuperscript{37–40} Studies have also consistently shown a general constellation of risk taking, sensation seeking, and drug selling behaviors to be predictive of violence and delinquency. These findings have support among male and mixed samples,\textsuperscript{5,28} but further research is needed to determine if these are unique risk factors for boys or if they also predict girls' violence and delinquency.

Low academic achievement is an important predictor of violence and delinquency.\textsuperscript{7,24} Several longitudinal studies have found that poor academic performance and achievement predict increased risk for involvement in violence in adolescence.\textsuperscript{7,41,42} Although some studies have indicated that poor school performance is a stronger predictor for boys than for girls,\textsuperscript{41,33,41} others have found the opposite,\textsuperscript{45} and still others have found no sex differences in the relationship.\textsuperscript{46} Further research is needed to definitively identify low academic achievement as a predictor of violent behavior for girls.
One of the unique findings for girls is the predictive relationship between early onset of puberty and later violence. Studies have found that girls who mature early compared to their peers are more likely to engage in delinquency and other risk taking behaviors.\textsuperscript{47–49} These findings suggest an interaction between biologic and social mechanisms. Girls who mature early are more likely to have older boyfriends, which is associated with an increased risk for delinquent behavior.\textsuperscript{50,51} Research also suggests that problems in parent-child relationships and exposure to peer deviance may mediate the relationship between early-onset puberty and delinquency.\textsuperscript{51}

Research has identified exposure to stress and child maltreatment victimization in childhood and adolescence as risk factors for violence among mixed sex samples,\textsuperscript{24} but there are some nuances in the findings for girls. First, there are sex differences in the exposure to different types of stressors. The rates of child physical abuse victimization by parents are generally equal among boys and girls,\textsuperscript{52} and a relationship between child physical abuse victimization and later violence has been documented for both boys and girls.\textsuperscript{53–56} However, girls are more vulnerable to sexual abuse and rape than boys, another risk factor for violence.\textsuperscript{57,58} The incidence of sexual abuse appears significantly more pervasive among girls who engage in violent behavior than among boys who engage in violent behavior.\textsuperscript{59,60} This research is primarily cross-sectional, however. One prospective longitudinal study examined whether youth who had substantiated histories of sexual victimization in childhood were more likely to engage in criminal and delinquent behavior in adolescence and early adulthood. The study found that all victimization in childhood (physical, sexual, and neglect) predicted later likelihood of arrest and that child victims of sexual abuse were no more likely to be arrested than victims of other forms of abuse.\textsuperscript{51} The study did not report findings separately for girls and boys. Another study found differential effects of out-of-home placement for maltreated males and females. The study reported that for youth who were not previously delinquent, maltreated girls who had out-of-home placements were less likely to be arrested in adulthood than those who were not placed out-of-home. In contrast, placement had no effect on rates of adult arrest for maltreated boys without a history of delinquency.\textsuperscript{62} This study suggests that contextual factors in the home and family may have particular salience for girls. More prospective longitudinal studies using representative samples are needed to confirm these relationships.

One study that did report differential effects for girls and boys on an individual factor found that religiosity served as a protective factor for high-risk females but not males.\textsuperscript{63} This finding is interesting in that it suggests a potential difference in the types of personal characteristics that protect youth from high-risk environments. It is difficult to interpret these findings, however, and the potential causal mechanisms at play in these relationships. Further research on protective factors and differential effects for boys and girls is needed.

**Family factors**

A wide range of family and parenting-related factors has been examined as predictors of violence and delinquency. The literature points to three categories of risk factors with consistent relationships with violence and delinquency through longitudinal and prospective studies: parent-child relationships, parental monitoring and supervision, parent criminal and antisocial behavior, and family conflicts and instability. A number of systematic reviews and meta-analyses have documented a relationship between parenting and violence. Parenting characteristics that consistently predict violence include poor parent-child relationships and low levels of parental monitoring and supervision. Studies have examined many factors within these general categories. A meta-analysis by Rothbaum and Weisz\textsuperscript{64} identified parental reinforcement, parental reasoning, punishments, and responsiveness as related to lower levels of child antisocial behavior. Poor family management practices (which include some of the characteristics identified by Rothbaum and Weisz) have also been identified as consistent predictors of delinquency and violence.\textsuperscript{5–28} A more recent meta-analysis by Hoeve et al.\textsuperscript{64} also found that the strongest predictors of violence and delinquent behavior were parental monitoring, psychologic control, and negative aspects of control, such as rejection and hostility. Findings of the effects of parental supervision and monitoring also show a great deal of consistency across studies and samples.\textsuperscript{64–66} In fact, poor parental supervision has been identified as the “strongest and most replicable predictor of delinquency” of all parenting characteristics.\textsuperscript{24,66} Although much of the research on parenting has not examined sex differences in the relationship between parenting factors and later violence, there is some literature that suggests that boys and girls are parented differently.\textsuperscript{67} Studies indicate that parents are more likely to use harsh discipline strategies with boys compared to girls,\textsuperscript{68} and parents perceive different types of aggression as relatively more normative for boys (physical aggression) compared to girls (relational aggression).\textsuperscript{69} These differences in the ways boys and girls are parented by caregivers may lead to differences in the relative strength of parenting risk factors among boys and girls.

Parenting factors can also serve a protective role. Gorman-Smith et al.\textsuperscript{70} found that parenting mediated the effects of stress on youth delinquency in poor but not seriously impoverished or devastated urban communities. A study of protective factors also found that parental monitoring and connectedness served as protective factors for high-risk youth.\textsuperscript{71} Some research indicates that there are sex differences in parental monitoring and supervision, suggesting that girls are more likely to be supervised; this may represent a unique protective factor for girls. However, more research is needed to replicate these sex differences in parental monitoring and supervision and to determine if these sex differences constitute a unique protective effect for girls.\textsuperscript{17}

In addition to aspects related to parenting, characteristics of parents themselves have been found to predict violence and delinquency. Research has found that parent criminality and antisocial behavior are consistent predictors of YV.\textsuperscript{5,28} Longitudinal studies have found that parental antisocial behavior and substance use are among the strongest predictors of youth delinquency and YV.\textsuperscript{24,71} Two recent meta-analyses highlight parental imprisonment as a particularly strong predictor of youth delinquency and YV.\textsuperscript{72,73} There are a number of plausible explanations for the relationship between parent criminality and antisocial behavior and youth delinquency and YV (for a detailed discussion, see Farrington et al., 2001\textsuperscript{74}). Although the relationship has been commonly examined for boys, it has not been extensively studied in girls. One study\textsuperscript{75} reported high rates of parental criminality and drug use
among a sample of girls arrested for serious crimes. More research is needed on the effects of parent criminality and antisocial behavior on the development of violence among girls.

The third category of family risk factors includes family conflict and instability. Longitudinal studies have reported that interparental violence predicts youth antisocial behavior and delinquency. Research has also established a relationship between family instability and delinquency, with one study finding continued effects of family disruption up to age 32. Among possible explanations for this relationship, evidence appears to indicate that family disruption causes a constellation of multiple stressors for youth, including parental conflict, parental loss, reduced financial resources, and deterioration in child rearing practices. Although data on this risk factor for girls are limited, one study examined the effect of parental transitions among children of drug-using parents and found that more parental transitions were associated with more delinquency for both boys and girls but more drug use for girls only. A replication and extension of these findings would better elucidate whether different developmental processes are at play in the role of family conflict and instability for boys and girls.

**Peer factors**

Interpersonal relationships with peers exert powerful social influences on youth. Social development is one of the most salient developmental tasks in adolescence, a time when violent and delinquent behaviors are more likely to emerge. This developmental period provides a unique context for the interaction between developmental timing and social influences. Research on peer relationships has documented that affiliation with deviant peers and gang membership/affiliation are strongly predictive of violence and delinquency among youth.

Association with delinquent peers increases the risk of serious delinquency and violence. In a systematic review, Lipsey and Derzon found that lack of social ties and involvement with antisocial peers were the strongest predictors of later violence among youth aged 12–14, ranking higher than any individual or family factor. A review of risk factors for adolescent violence found that peer antisocial behavior was the single strongest predictor of later violence. Affiliation with deviant peers may interact with family risk factors to further increase risk. For example, negative peer influences, when combined with low parental monitoring and lack of parental warmth, can substantially increase the risk for violence and delinquency. Although there is a long history of research on deviant peer affiliation as a risk factor, most of the work has been conducted with male samples. Recent research has examined the impact of associating with delinquent peers on girls' behavior. Several studies have found that there are unique patterns of affiliation among delinquent peers for boys compared to girls. Although delinquent boys tend to affiliate with other delinquent boys, studies have found that delinquent girls associate with delinquent peers of both sexes. A recent report using the Pittsburgh Girls Study data reported that delinquent girls were associated with deviant peers of both sexes. Other studies have found that delinquent male dating partners in particular increase girls' risk for offending. In addition to the risk conferred by association with peers who are engaging in delinquent and violent behavior in the general, gang membership has been identified as a key risk factor in youth violence. In fact, the association between gang membership and violence goes beyond the risk of affiliation with delinquent peers. Research has shown that gang joining is associated with increases in both violence perpetration and victimization, even moreso than when associating with violent peers who are not gang involved. Data from a nationally representative sample indicate that approximately 8% of youth had belonged to a gang by age 17. These rates are higher in gang-problem cities. One of the most striking findings with respect to gangs and violence is that gang members are responsible for a large proportion of all violent offenses committed in adolescence. Furthermore, youth perpetrate violence at substantially higher levels when they are in a gang than in the years either before or after membership. These increased rates of violence are also found for youth who affiliate with gangs but are not members themselves. A meta-analysis reported that gang membership in adolescence more than quadrupled the risk for violence among older youth. The relationship between violence and gang membership has been extensively studied for males, but relatively less is known about gang membership among females. A study using the National Longitudinal Survey of Youth, a nationally representative sample, found that the male/female ratio of gang membership was approximately 2:1 (11% of males compared to 6% of females). Esbensen et al. reported nearly comparable proportions of male (8.8%) and female (7.8%) gang members. Studies of gang membership among girls suggest that although most male and female gang members leave gangs, females leave gangs at an earlier age.

**Community factors**

Physical, social, demographic, and political characteristics of local environments exert a powerful influence on the development and epidemiology of violence. Studies have documented a relationship between neighborhood adversity and violence, crime, and delinquent behavior. Research has revealed a number of risk factors at the community level; the most consistent findings point to economic deprivation; community disorganization; the availability of drugs, alcohol, and firearms; and neighborhood crime. Neighborhoods with economic deprivation and concentrated poverty experience disproportionately high rates of violence; crime and violence tend to be higher in areas where at least 20% of the residents are poor. These areas are often characterized by high concentrations of unemployment, residential instability, family disruption, crowded housing, drug distribution networks, low community participation, and high rates of school dropouts. These are all factors that further increase the risk for violence and delinquency. In a female-only sample, Molnar et al. found that concentrated poverty predicted girls' violent behavior over and above a previous history of violence perpetration. Community disorganization can also play a role in the manifestation of violence. In particular, lower levels of social organization in neighborhoods are associated with antisocial behavior and maladaptive youth development. High levels of social disorganization in communities, which refers to the absence or breakdown of communal institutions and relationships (e.g., family, school, church, and local government) that traditionally encouraged cooperative
relationships among people, often results in an absence of effective social controls.\textsuperscript{101–103} The absence of social controls creates environments with increased opportunities for crime and violence. Community factors may interact with risk factors at the individual and family level. For example, social disorganization limits community residents’ opportunities to supervise and control adolescent peer groups, especially gangs.\textsuperscript{97} Research has found that one of the best predictors for variation in violence across communities is the neighborhood’s degree of informal social control in combination with social cohesion and trust.\textsuperscript{101} Although poor communities are more likely to have social disorganization, not all impoverished communities experience social disorganization.\textsuperscript{101}

Studies examining the ecologies of communities have demonstrated a relationship between the availability of drugs and alcohol and violence. In particular, research on the density of alcohol outlets in communities has found that violence and crime increase in proportion to the increase in alcohol outlet density.\textsuperscript{104,105} Researchers have also found that the presence of illicit drug activities is associated with higher rates of crime.\textsuperscript{5,28,104} One study reported that whereas the availability of both alcohol and illegal drugs predicts violence, drug crime density explained more variance in violence than did alcohol outlet density.\textsuperscript{104} These findings indicate that the presence of violence is associated with drug crime and that the availability of drugs is more strongly associated with violent crime than is the availability of alcohol. Furthermore, research has found a strong positive relationship between the availability of illegal firearms (but not legally owned firearms) and violent crime and delinquency.\textsuperscript{106}

Greater overall levels of crime in neighborhoods are also related to higher rates of violence and delinquency for mixed samples. The presence of violent crime in communities is associated with significantly higher rates of youth violence and delinquency overall.\textsuperscript{5,28} One study found that for girls growing up in similarly disadvantaged neighborhoods, those who were exposed to community violence engaged in violent behavior at higher rates.\textsuperscript{14}

There is limited research on the impact of community factors on girls vs. boys. Some research suggests that girls tend to be more closely supervised than boys do, which decreases opportunities for girls’ exposure to neighborhood and community risk factors.\textsuperscript{17} As previously mentioned in the summary of findings related to parental monitoring, these findings suggest that parents and families may have a potential protective effect on girls living in disadvantaged neighborhoods.\textsuperscript{70} More research is needed to understand the effects of neighborhood and community characteristics on violent behavior in girls. In particular, gaps in research should address how economic deprivation, community disorganization, the availability of drugs and alcohol, and neighborhood adults involved in crime influence girls’ violent behavior. Furthermore, risk and protective factors that have unique influence on girls’ behavior, such as early puberty and parental monitoring, should be examined for potential interaction with community risk factors.

**Effective and Promising Violence Prevention Programs for Girls**

The third step in the public health approach is to develop and test prevention strategies. A number of strategies and programs have been rigorously evaluated and found to have a significant impact on reducing risk for violence.\textsuperscript{11,107,108} Such evidence-based programs have often demonstrated positive effects in rigorous, randomized evaluations as well as one or more replications. However, most of the evaluations involve mixed-sex samples, so it is not always possible to determine if program effects are evident for both male and female participants. Given differences in base rates and risk factor profiles across sexes, as well as possible differences in the underlying mechanisms leading to violence, significant effects found in mixed-sex samples cannot be assumed to apply to girls. In order to establish an evidence base for programs to prevent violence among girls, programs must have analyzed outcomes separately for female participants or included only female participants. In this section, we provide an overview of strategies that have been found to be effective in preventing violence and review the evidence for preventing violence among girls specifically.

With hundreds of violence prevention programs available for communities and schools to implement, there is a critical need for identifying programs with the best possible evidence for reducing and preventing youth violence. The Blueprints for Violence Prevention Initiative (www.colorado.edu/cspv/blueprints/) was developed to serve as a resource for communities and others trying to make informed choices about youth violence and drug abuse programming. Blueprints has identified 11 prevention and intervention programs that meet a strict scientific standard of program effectiveness as Model programs, and another 18 that have produced Promising results through rigorous evaluation but need further replication. Some of the Blueprints Model and Promising Programs are described below, with particular attention given to their effects for girls. The programs are categorized by overarching strategies or approaches, including universal school-based programs, intensive therapeutic community-based approaches, parenting and family-strengthening programs, and other promising strategies. Table 1 provides a list of Blueprints Model and Promising programs in these categories, key findings related to violence and delinquency, and information about whether program effects have been evaluated for girls.

**Universal school-based programs**

School-based programs delivered to all students can be effective at reducing rates of violence-related behaviors, particularly programs that build youths’ social competencies and skills.\textsuperscript{10} A number of school-based programs have been evaluated; reviews and meta-analyses have supported the effectiveness of this approach to prevention.\textsuperscript{10,107} Universal school-based programs intended to prevent violent behavior have been used at all grade levels; all children in those grades receive the programs in their own classrooms. These programs may be targeted to schools in a high-risk area, defined by low socioeconomic status (SES) or high crime rate, and to selected grades as well. There is strong evidence that universal school-based programs decrease rates of violence among school-aged children and youth.\textsuperscript{10,107} There are eight universal school-based programs on the Blueprints Model and Promising Programs list. Most of the Blueprints programs have not examined effects separately by sex.\textsuperscript{109–119} (Table 1). Therefore, it is not possible to determine if positive
impacts were found for both boys and girls. Other programs have shown effects only on boys (Table 1) but no significant effects on reducing violence or delinquency among girls.

Only one Blueprints Model Program using a universal school-based approach examined program effectiveness for boys and girls separately and demonstrated positive effects on both boys’ and girls’ behavior: the Olweus Bullying Prevention Program (OBPP). OBPP is a comprehensive, schoolwide program designed and evaluated for use in elementary, middle, and junior high schools. OBPP has been found to reduce self-reported and observed bullying perpetration and victimization among youth, improve the social climate of classrooms, and reduce related antisocial behaviors, such as vandalism and truancy. Limber et al. reported significant effects on bullying perpetration for both girls and boys in a U.S. sample of elementary, middle, and high school youth. Strategies that intervene with high-risk, chronic youth offenders can be effective in preventing repeated violence. Intensive treatment strategies address factors in the youth’s environment that contribute to violent and delinquent behavior, including individual characteristics of the youth, family relations, peer relations, and school performance. There are three Blueprints programs that use intensive family and community-based approaches for high-risk youth; all three are Model programs (Table 1). One of the programs, Multisystemic Therapy (MST), has not examined effects separately for girls and boys. Additionally, the majority of participants in MST trials are boys (up to 80%). Therefore, it is not possible to assume that overall program effects are true for both boys and girls.

Multidimensional Treatment Foster Care (MTFC) has produced significant effects in a girls-only sample. MTFC is an intensive family and community-based approach for high-risk youth.

### Table 1. Descriptive Information About Evidence-Based Blueprints Model and Promising Programs and Program Impacts Examined for Girls

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<td><strong>Seattle Social Development Project</strong></td>
<td>Promising</td>
<td>Aggression; antisocial, externalizing behaviors; alcohol and delinquency initiation; violent delinquency</td>
</tr>
<tr>
<td><strong>Raising Healthy Children</strong></td>
<td>Promising</td>
<td>Antisocial behavior; alcohol and marijuana use</td>
</tr>
<tr>
<td><strong>Project Toward No Drug Abuse (Project TND)</strong></td>
<td>Model</td>
<td>Weapons carrying; marijuana and hard drug use; violence victimization</td>
</tr>
<tr>
<td><strong>Good Behavior Game</strong></td>
<td>Promising</td>
<td>Aggression; alcohol and substance abuse; antisocial behavior</td>
</tr>
<tr>
<td><strong>Intensive family and community-based approaches for high risk youth</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multidimensional treatment, Foster Care</td>
<td>Model</td>
<td>Delinquency; criminal behavior; assaults</td>
</tr>
<tr>
<td><strong>Functional Family Therapy</strong></td>
<td>Model</td>
<td>Conduct problems; youth violence; drug abuse; delinquency and crime</td>
</tr>
<tr>
<td>Multisystemic Therapy</td>
<td>Model</td>
<td>Peer aggression; arrests, including arrests for violent offenses; violent delinquency</td>
</tr>
<tr>
<td><strong>Parenting skill and family relationship programs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brief Strategic Family Therapy</td>
<td>Promising</td>
<td>Conduct problems, including physical aggression; delinquency; substance use behavior problems; externalizing behavior; aggression</td>
</tr>
<tr>
<td>The Incredible Years Series</td>
<td>Model</td>
<td>Substance use; delinquency</td>
</tr>
<tr>
<td>Guiding Good Choices</td>
<td>Promising</td>
<td>Negative, disruptive behavior; conduct problems</td>
</tr>
<tr>
<td>Triple P Positive Parenting Program</td>
<td>Promising</td>
<td>Aggression; delinquent behavior; fighting; alcohol, tobacco, and drug initiation and use</td>
</tr>
<tr>
<td>Strengthening Families Program: For Parents and Youth</td>
<td>Promising</td>
<td></td>
</tr>
</tbody>
</table>

PATHS, Promoting Alternative Thinking Strategies.
alternative to foster care, group or residential placement, or incarceration for male and female youth displaying chronic disruptive and antisocial behavior. A recent evaluation of MTFC focused solely on females. Chamberlain et al.\textsuperscript{130} found maintenance of effects for MTFC in preventing female delinquency at a 2-year follow-up assessment. Girls in the MTFC group had fewer days in locked settings, fewer criminal referrals, and less self-reported delinquency.

Evaluations of Functional Family Therapy (FFT)\textsuperscript{146} examined program effects on boys and girls separately and found positive effects for both boys and girls. FFT is a therapeutic approach for high-risk youth and their families that has been widely implemented in community settings across the United States. FFT has demonstrated positive effects on a range of adolescent behavior problems, including reducing violent crime, delaying the onset of offending, and preventing violence and delinquency.\textsuperscript{131–133} A randomized controlled trial of FFT reported that both boys and girls who had received FFT in adolescence had lower rates of violent crime in adulthood.\textsuperscript{133}

**Parenting skill and family relationship programs**

Substantial evidence supports the use of parenting programs as an effective strategy to positively influence child rearing practices and child behavior. Evidence-based parenting programs involve providing opportunities for parents to actively acquire parenting skills and build positive relationships with their children. Such programs also teach parents strategies for identifying and managing youths’ maladaptive behaviors and for reducing the occurrence of those behaviors. There are five Model and Promising parenting and family programs on the Blueprints list that have demonstrated effects on violence and delinquency\textsuperscript{134–136} (Table 1). Of these, none have reported program effects separately for boys and girls. Although program impacts on girls specifically have not been reported for any of the programs, given the strong protective effects that positive parent-child relationships have for girls, it is plausible to assume that programs that teach effective parenting skills and build parent-child relationships have strong potential for being effective at reducing girls’ violence and delinquency.

**Other promising YV prevention approaches**

Other strategies are promising, but further evaluation is needed to determine the impact on youth violence-specific outcomes. Specific structural and policy approaches that change the environmental characteristics of communities can enhance community safety and, in turn, can be effective at influencing key risk and protective factors for YV. For example, evaluations of Business Improvement Districts\textsuperscript{147} have reported significant reductions in community rates of violent crime by addressing community-level processes, such as order maintenance, formal and informal social control, and community cohesion. Community-based strategies that include street-level outreach and conflict mediation also have prevention promise. CeaseFire\textsuperscript{148} works to interrupt violent, particularly shootings, and change neighborhood-level norms around violence. An evaluation by Skogan et al.\textsuperscript{148} found that CeaseFire reduced shootings and killings and prevented retaliatory killings in most of the communities in which it was implemented. Housing voucher policies, which involve providing families living in high-density poor neighborhoods vouchers to move to less disadvantaged neighborhoods, involve strategies for changing the community conditions for high-risk youth through mobility interventions. Evaluations of housing vouchers have found sex differences, including lowered rates of drug use and violent crime arrests for girls but not for boys.\textsuperscript{149} More rigorous evaluation research is needed to determine the impact of promising structural and policy approaches and community mobilization and street outreach strategies on preventing youth violence in general and among boys and girls specifically.

**Conclusions**

We reviewed CDC’s public health approach to violence prevention and used the public health framework to summarize the research on prevention of violence among girls. The review drew on surveillance and prevalence findings, epidemiology and risk factor research, and prevention research to summarize the literature on the phenomenology and prevention of girls’ violence and delinquency. Although the research on violence prevention in general has a rich history, the findings summarized highlight many gaps in our current understanding of girls’ perpetration of violence. In considering the literature of boys’ violence and delinquency side-by-side with that for girls, the differences are striking. The gaps identified in the literature highlight opportunities for recommendations for scientific advances that are needed to understand the occurrence of violence among girls and promising and effective ways to prevent it.

With respect to etiologic research, a number of longitudinal studies have provided complex and nuanced information about developmental trajectories for boys’ violent and delinquent behavior. Although the findings from these studies can inform our understanding of violence among girls, we need similar research that identifies developmental pathways to adaptive and maladaptive behavior among girls. More data on etiology and risk factors for girls are needed, particularly from longitudinal and prospective studies that can provide information about how maladaptive behaviors develop and evolve and the groups most at risk for engaging in such behaviors. Furthermore, inconsistent findings in prevalence studies across self-report and administrative data point to a need to establish an understanding of the true trends in girls’ violence. Are rates of violence among girls increasing, or are they stable? What is the extent of violence among girls? Are there unique negative impacts of violent behavior for girls or their victims? The answers to these questions can provide a better understanding of the nature and prevalence of violence among girls.

There are a number of gaps in research on risk and protective factors, as well as gaps in understanding the developmental trajectories of violence and delinquency among girls. First, research is needed to understand risk and protective factors that are unique to girls’ violence, as well as those that overlap with the literature on boys’ violence. Specifically, it will be important to identify ways in which risk factors at the individual, family, peer, and community levels that have been found to predict boys’ violence also predict girls’ violence. Second, research must examine the ways in which risk and protective factors interact across levels of the social ecology, and possibly in ways that are unique to girls.
PREVENTING VIOLENCE AMONG GIRLS

For example, research on early pubertal timing as a key risk factor for girls suggests that it may interact uniquely with family and peer factors. More research is also needed to understand gang affiliation, a critical risk factor for boys, among girls. Research should address an understanding of the role of gang affiliation for girls and how gang affiliation interacts with parenting factors and other individual factors to increase or decrease girls’ likelihood to engage in violence.

Third, research is needed that elucidates the developmental trajectories of violence among girls specifically. A number of longitudinal studies have provided a rich picture of the developmental pathways for youth and the ways risk factors evolve and interact developmentally. However, either these studies have used male samples, or they have relied on mixed samples without examining sex differences. Because the rates of violence among boys are substantially higher than those for girls, it is likely that the boys’ rates are driving the effects in studies using mixed samples. Therefore, research on risk and protective factors needs to take developmental considerations into account and examine the developmental pathways for girls as well as for boys. Answers to these key questions about the etiology and developmental pathways of violence among girls can inform the development of prevention and intervention efforts with the greatest likelihood of impact on girls’ violence. Identifying risk factors that are unique to girls can highlight ways that our current prevention efforts can be better directed at reducing risk for violence among girls. This work can also identify ways in which unique risk factors are not addressed by current evidence-based prevention programs for violence and inform the enhancement of existing evidence-based programs to ensure that risk and protective factors for girls are addressed in the context of those programs.

Research has made some strides in identifying protective factors for violence. Although some progress has been made in identifying protective factors, that work currently relies on longitudinal data using either all-male samples or predominantly male samples. More research is needed to focus on protective factors for girls and the extent to which they are consistent with those for boys. This will be difficult, as the landscape of longitudinal studies involving girls is much more limited than it is for boys. However, this work is critical because it has tremendous potential for paving the way toward identifying opportunities for promoting girls’ positive development and enhancing protective factors for girls. This work has direct implications for prevention, as it informs ways to bolster and enhance factors that protect girls from high-risk environments and that place girls on positive life trajectories. Research on positive aspects of parenting for girls suggests that this may be a unique area of opportunity for prevention, in that parents may be more inclined to provide effective monitoring and supervision for girls. Additionally, research on sex differences in socialization between girls and boys indicates that the role of peers may have a unique influence on girls and boys. We need to explore this more fully to examine opportunities for prevention.

The research on prevention and evaluation of prevention programs also needs to address major gaps in effectiveness of programs for girls. As summarized in this article, although there are a number of evidence-based programs and strategies for preventing violence, very little is known about whether those programs are effective at preventing violence and delinquency among girls. It seems surprising, given the differences between boys’ and girls’ rates and forms of violence, that evaluation trials for prevention programs do not routinely report program effects separately for boys and girls. This may be because of differences in base rates; some evaluation samples may not have sufficient variability in girls’ outcomes to examine impact by sex. Also, some programs for high-risk youth are more likely to recruit boys into evaluation trials. For such programs, using evaluation trials to conduct subgroup analyses by sex is not feasible, as the proportion of girls in the sample is likely too small. However, new trials that recruit only girls in the sample can be used to examine effectiveness for girls. In many cases, large trials have been conducted or are currently underway for prevention programs. These studies could potentially examine and report program impacts by sex. These efforts would start to fill gaps in our understanding of the effectiveness of evidence-based programs for girls.

In summary, the review of research on the etiology and prevention of violence among girls highlighted some critical gaps. Recommendations for examining good quality prevalence data and conducting risk and protective factor research for girls’ violence can start to fill some of those gaps. Furthermore, we need a thorough understanding of the effectiveness of prevention programs and strategies for girls, including the extent to which they prevent violence and increase protective factors and decrease risk factors specifically for girls.

Acknowledgments

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

Disclosure Statement

The authors report no conflicts of interest.

References


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