Risk Factors and Behaviors Associated With Adolescent Violence and Aggression

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Objective: To explore risk factors and behaviors associated with aggressive and violent behaviors among adolescents. **Methods**: A comprehensive review of research literature from various disciplines associated with improving the health and well-being of adolescents. **Results**: Risk factors and behaviors associated with adolescent aggression and violence are discussed via 6 major factor categories: individual, family, school/ academic, peer-related, community and neighborhood, and situational. **Conclusion**: Adolescent aggression and violence develops and manifests within a complex constellation of factors. Prevention intervention efforts should be theory based, multicomponent, and multisystem; they should begin in middle school and continue into high school with a comprehensive evaluation design.

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V iolence, particularly among young people, has been recognized as a significant public health problem.[1] The United States has the highest rates of violence in the industrialized world.[2,3]

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Violent and aggressive behavior surges to its apex during the teenage years.[2] Research studies have documented the impact of youth violence in regard to the number of young people affected,[4-7] health care resources utilized,[8] and loss of young lives.[9,10]

There is general agreement that behavior, including aggressive and violent behavior, is the result of a complex interplay of individual biological, genetic, and environmental (social and physical) factors, starting during fetal development and continuing throughout life.[11] Clearly, genes affect biological development, however, biological development within the context of environmental input. Hence, a truly biopsychosocial approach is imperative for the study of adolescent aggression and violence. It should be noted here that many children/adolescents reach adulthood without involvement in serious aggressive or violent behavior, even in the face of multiple risks. Although risk factors may help identify which children are most in need of preventive interven-

tions, they cannot identify which particular children/adolescents will become serious chronic violent aggressors. It is, however, widely recognized that the more risk factors a child or adolescent experiences, the higher the risk for aggressive and/or violent behavior.[12] Much of the literature that has examined risk factors for adolescent aggression and violence is based on longitudinal studies, primarily of white males, with some research samples chosen from high-risk environments. Caution must be taken in generalizing this literature to females, minorities, and general populations. This review is not meant to be a comprehensive overview of all the literature on adolescent aggression and violence. To better understand the complexity of this public health problem, risk factors for and behaviors associated with adolescent violence and aggression are discussed within 6 major categories: individual, family, school/academic, peer-related, community and neighborhood, and situational. Although these risk factors and behaviors interact, for clarity they are discussed separately.

INDIVIDUAL FACTORS
Age
Rates of violence begin to rise in preadolescence or early adolescence, peak in late adolescence, and decline in young adulthood.[13,14] Some aggression is nearly universal in American children, although much of this behavior is reasonably mild and temporary. Although the exact age of onset, peak, and age of desistance varies by offense, the general pattern has been remarkably consistent over time, in different countries, and for official and self-reported data.[14] Research suggests that those who experience early onset of aggression or violent behavior are more likely than later-onset aggressors to be more serious and persistent aggressors.[15] However, predictors associated with onset do not predict persistence particularly well.[16]

Gender
Males appear to be much more likely to engage in serious violence than do females,[17] possibly because boys are socialized into roles that encourage higher levels of physical aggression.[17] Some research suggests that females more often express hostility through indirect and verbal forms of aggression, such as alien-

A low resting heart rate is weakly predictive of violent behavior.

ation, ostracism, and character defamation.[17] Females also often display relational aggression via exclusion of peers, gossip, and collusion directed at relational bonds between "friends."[18] Cross-gender conflict increases with age, with females reporting more conflicts with males than males report with females.[19] As dating gets underway, violence between genders becomes more common; however, males victimize females more than vice versa.[19]

Medical/Physical Conditions
Prenatal and perinatal risk factors may compromise the nervous system creating vulnerabilities in children that can lead to abnormal behavior. Hyperactivity, attention problems, and impulsiveness in children have been found to be associated with aggressive behavior. These behaviors can be assessed very early in life and are associated with certain prenatal and perinatal histories.[20] Prenatal exposure to alcohol, cocaine, heroin, and nicotine appear to be associated with hyperactivity, attention deficit, and impulsiveness.[21,22]

A low resting heart rate is weakly predictive of violent behavior. It is thought that a low pulse rate is an indicator of a fearless temperament and/or underarousal that predisposes some individuals toward aggression and violence.[23]

Psychological Characteristics
Impulsivity, attention deficit, and hyperactivity have been associated with later aggressive behavior,[24] with physical aggression and oppositionality as the best predictors of later violence.[25,26] Children who have not learned alternative means to physical aggression, and who are oppositional, fearless, impulsive, have difficulty delaying gratification and show few prosocial behaviors towards peers, are failing in school, and are at higher risk of being rejected by peers, which in turn can lead to serious aggression and violence as consequences.[27] Adolescents with

> *Being born into a single-parent family has also been associated with increased risk of aggression and violence.*

lower verbal IQ,[28,29] executive functions (goal-directed activity), perceptions of social cues, and problem-solving processing patterns[29] are at an increased risk for aggression and violence. Some mental health disorders of childhood have been found to put children at risk for future aggressive behavior as well. For example, conduct disorder is diagnosed when an adolescent is troublesome and breaking rules or norms but not necessarily engaging in illegal behavior, especially at younger ages. This behavior may include lying, bullying, cruelty to animals, fighting, and truancy.[12] Many adolescents in US society at some time engage in illegal behaviors, whether some kind of theft, aggression, or status offense. Many adolescents, during the period in which they engage in these behaviors, are likely to meet formal criteria for conduct disorder.[12] Behavior characterized by wilful disobedience and defiance is considered a different disorder (oppositional defiant disorder), but it often occurs in conjunction with conduct disorder and may precede it.[12] Major depressive disorder, particularly in females, may be a "cental pathway through which girls' serious aggression and violence develops."[30]

Early initiation of aggression, violence, and delinquency can predict chronic and more serious violence.[31] In a more general sense, involvement in a number of antisocial behaviors, including dishonesty, cheating, stealing, bullying, cruelty to animals, destruction of property, substance abuse,[32] selling drugs, and early sexual intercourse,[33] have been consistently associated with greater risk of adolescent aggression and violence.[12,34] Antisocial attitudes and beliefs and favorable attitudes toward violence and hostility toward police and other authorities have consistently predicted later violence for males, but are inconsistent predictors for females.[35] Valois and colleagues,[36] for example, found an association between perceived life dissatisfaction and violent and aggressive behaviors in a sample of public high school adolescents.

FAMILY FACTORS
Family Structure
It many not be the family structure itself that increases the risk of aggression and violence, but some other factor that explains why that structure is present. Alternatively, a certain family structure may increase the risk of aggression and violence, but only as an added stressor in a series.[12] It may be the number, rather than the specific nature, of the stressors that is harmful.[12] Although research has found an association between separation or divorce and violence and aggression, there is considerable debate about the meaning of the association.[37] Longitudinal studies have found that children of divorcing parents demonstrate an increased level of aggression before the divorce took place,[38] and that disruptive parenting practices and antisocial personality of the parent(s) accounted for the apparent effects of divorce and remarriage.[39] Thus, it is likely that the increased risk of aggression experienced among children of broken homes is related to the family conflict prior to the divorce or separation, rather than to family breakup itself.[24]

Single-Parent Families
Being born into a single-parent family has also been associated with increased risk of aggression and violence. Research that considers the socioeconomic conditions of single-parent households and other risks, including disciplinary styles and problems in supervising and monitoring children, shows that these other factors account for the differential outcomes in these families.[40] Recent research found no association between single parenthood in a poor, urban, US community.[40] Nevertheless, children in single-parent families are more likely to be exposed to other risk factors for aggressive/violent influences, such as frequent changes in the resident father figure,[41] difficulty in securing assistance,[42] and difficulty in providing supervision for their children.[43]

Teen Pregnancy
Children born to teen mothers are more

likely to be aggressive, chronically delinquent, and caught up in a cycle of poverty.[37] Poverty has been documented as the strongest predictor of aggression and violence including homicide.[44] A teenager who becomes pregnant is at an increased risk of being poor, receiving welfare, having curtailed her education, and delivering a low-birthweight baby. Separately or together, these correlates of teenage parenthood increase the risk of aggression and violence.[24] Children raised in families of 4 or more have an increased risk of aggression and violence,[37] mostly due to less adequate discipline and supervision of children. There is some debate in the literature regarding the influence of aggressive/violent siblings, parenting difficulties, or a synergistic effect of both for large family size.[37,45]

Parental Factors

Parental criminality (violent criminal acts)[46] and child maltreatment (abuse and neglect)[47] are associated with adolescent aggression and violence. Three separable dimensions of parent-child relations have been identified as predictors of aggression and violent crime: poor family management practices, poor involvement and interaction of the parent with the child/adolescent, and, poor bonding to the family. Research has consistently shown that parental failure to set clear expectations for children's behavior, poor parental monitoring and supervision of children, and excessively severe and inconsistent parental discipline of children represent a constellation of family management practices that predicts later aggression, violence, and substance abuse.[39] Beyond the strategies parents use to manage their children, the degree to which parents interact with their children and are involved in their lives appears to contribute to a risk for future violence.[35,46] According to social control theory, bonding to the family in a prosocial fashion (with prosocial family members) inhibits aggression and violent behavior.[35]

There is evidence from studies on teen substance use that parental attitudes predict antisocial behaviors among adolescents.[47] Evidence also suggests that residential mobility is a predictor of violent behavior. Frequent moves may be reflective of other family factors such as poverty and family instability or may inhibit the development of children's bonds

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in school and neighborhood and contribute to the risk of violence independently.[48] However, further research is needed to assess the independent contribution of residential mobility to violent behavior. There is also evidence that disruptions of the parent-child relationship (separation from parents and leaving home at an early age) are predictive of later violent behavior in children and adolescents.[46,50,51]

SCHOOL FACTORS
Academic Failure

Poor academic achievement at the elementary, middle, and high school levels has consistently predicted later aggression and violence for both male and female adolescents.[27,46,48,49] Low academic achievement is the most frequent reason given by teachers who recommend retention for their students.[52] Despite the intuitive appeal of retention as a mechanism for improving student performance, the retention literature overwhelmingly concludes that it is not as effective as promotion.[53] The average negative effect of retention on achievement is even greater than the negative effect on emotional adjustment and self-concept.[53]

Low Bonding to School

Theories of social control have emphasized the importance of the bonds of commitment and attachment to school as a protective factor against violence and juvenile crime.[54] Available evidence generally supports the hypothesis that a low degree of bonding to school predicts later violent behavior, though it is somewhat mixed, varying in part, with the indicators of school commitment used.[35,48]

Truancy and Dropping out of School

Truancy and dropping out of school may

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be behavioral indicators of a low degree of commitment to schooling. In a study by Farrington,[46] adolescents who were truant at ages 12 to 14 were more likely to engage in violence in adolescence and adulthood and to be convicted of a violent offense.

School Suspension and Expulsion

In recent years, suspension and expulsion have become part of the debate on school discipline that has accompanied the rising concern about school violence, particularly related to weapons possession, physical fighting, and increasingly defiant, aggressive behavior by school students.[55,56] When adolescents are suspended or expelled from school, the risk for violence and aggression increases. Suspension and expulsion make it more difficult for an adolescent to keep up with academic subjects. Furthermore, extra time without supervision increases the opportunities for risk taking.[12]

Academic Tracking

Academic tracking, also known as "ability grouping" or "streaming,"describes teaching practices whereby students who appear to be similar in ability are grouped together for instruction. The main concept is to reduce the variation in range of individual differences in class groups and simplify the task of teaching. The impact of tracking in secondary school suggests that the impact is largely negative for students in low tracks.[57] Students in low tracks (particularly blacks and Hispanics) tend to be less employable, earn lower wages, suffer diminished self-esteem, have lowered aspirations, and come to hold negative attitudes toward school. In turn, these emotional consequences greatly increase the likelihood of dropping out of school and engaging in aggres-

sive and violent behaviors.[57]

School Transitions and High Delinquency Rate Schools

Research also indicates that school transitions are associated with increased risk of violence and antisocial behavior. Maguin et al, for example, find among 14- to 16-year old youth in at-risk Seattle neighborhoods that the number of times in the past year children had changed schools was associated with violent behaviors at age 18.[48] Farrington's[46] work also indicates among boys in a working-class area of London that those who attended schools with high rates of delinquency at age 11 reported slightly, but not significantly more violent behavior than other youths.

Occupational Aspirations/ Preferences

Hough and Wolf [58] considered the relationship between occupational aspirations and preferences and violence in a sample of males born in Copenhagen. These researchers found that adolescents who indicated a preference for lower-status jobs were more likely to be registered for a violent offense between the ages of 15 and 22.

PEER INFLUENCES
Delinquent Siblings and Peers

Social learning theories suggest that violence behavior is learned and maintained through environmental experiences. Youth who are exposed to and associate with antisocial family members and peers learn to participate in antisocial behavior through the process of vicarious learning (modeling) and the principles of reinforcement.[48,59] Robust findings in the adolescent delinquency literature indicate that antisocial behavior (aggression and violence) is strongly related to involvement with deviant siblings and peers.[35,46,48,59] Factors such as peer delinquent behavior, attachment of allegiance to peers, time spent with peers, peer approval of aggression and violence, and peer pressure for violence are all associated with adolescent antisocial and violent behavior.[60,61] A longitudinal study by Farrington[46] found that subjects who had delinquent siblings by age 10 predicted later convictions for violence. Like delinquent peers, delinquent and antisocial siblings appear to have their stron-

gest association with violent behavior during adolescence. The relationship also appears to vary by gender. Williams[35] found that the influence of delinquent siblings was stronger for females than for males. Aggressive/violent peers may contribute to the spread of violence during adolescence, but they may be less relevant in predicting the violent behavior of life-course persistent offenders who initiate their aggressive and violent behavior earlier in life.[15] In contrast, Ageton[62] found that adolescents whose peers disapproved of delinquent behavior were less likely to report having committed sexually assaultive behavior later. Elliott[63] reported similar results for all forms of violence in his national youth survey. Associating with peers who disapprove of delinquent behavior may inhibit later violence. In adolescence, susceptibility to peer influence is inversely related to interaction with parents.[64] Perceptions are also influential to adolescent behavior. Adolescents may be more influenced by what they think their peers are doing than by what they actually are doing.[65]

Co-offending is also a common phenomenon among adolescents, mostly in unstable pairs or small groups, not organized gangs.[65] High-risk youth are particularly likely to support and reinforce one another's deviant behavior when they are grouped for intervention. Dishion and colleagues[66] have labeled this process "deviancy training," which has shown to be associated with later increases in substance use, aggression, and violent behavior.

Gang Membership

Gang offenders tend to be younger when they begin their violent criminal careers, and are more likely to be violent in public places and more likely to use guns.[67] Research has also suggested that gang membership facilitates pressure to conform to violent behavior and is associated with high rates of violent criminal activities while the youth is involved in the gang.[68]

COMMUNITY AND NEIGHBORHOOD FACTORS
Poverty

Poverty is the strongest predictor of violence, especially combined with prejudice, discrimination, and structured inequities that impede social mobility.[44]

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Poverty creates frustration and feelings of relative deprivation, injustice, and anger, as well as self-devaluation and hopelessness. Usually poverty, disadvantage, and discrimination give rise to violence within homes and whole communities.[69]

Community Disorganization and Low Neighborhood Attachment

Low neighborhood attachment, community disorganization, availability of drugs and firearms, neighborhood adults involved in crime, exposure to violence and racial prejudice in the neighborhood, community laws and norms favorable toward violence, and media portrayals of violence have all been identified as factors that influence individual violence.[48,70] Research on community and neighborhood factors for violence suggests that a multitude of physical, psychological, and social stressors often concentrated in the same, relatively few, high disadvantaged neighborhood environments leads to an exponential increase in triggers for violence.[71]

SITUATIONAL FACTORS

Sampson and Larson[72] have defined situational factors as those factors, outside the individual, that influence the initiation, unfolding, or outcomes of a violent event. These factors have been described as factors that help explain how an individual's potential for violence occurs in certain situations.[34,37] The presence of a weapon, consumption of alcohol or other drugs, the role of bystanders, the motives of the offender in the situation, the relationship of the potential offender to the potential victim (stranger or nonstranger), and the behavior of the victim (resistance or nonresistance) have been identified as possible situational predictors of violence.

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IMPLICATIONS FOR PREVENTION

Despite the number of risk factors for adolescent violence, prevention efforts can be successful. Schools are a particularly appropriate setting for violence prevention efforts. Schools are often the setting in which violent conflicts occur. Although extreme violent events are rare (eg, Littleton, Colorado, and Jonesboro, Arkansas), school incidents involving physical fighting and weapons carrying are common.[75,76] The prevalence of conflict in schools may be partially explained by the nature of a school's social environment.[77] Students, often from diverse backgrounds, spend considerable time at school in close proximity to their classmates. Because schools are a primary context for social development, they can provide a natural opportunity for programs that focus on teaching nonviolent strategies for addressing conflicts. The presence of prevention specialists and peer mediators provides opportunities to help students learn how to address conflicts as they occur and can reinforce the use of skills taught by prevention programs.[78-80] Moreover, prevention specialists can serve as role models for nonviolent conflict resolution,[79,80] and programs designed to permeate daily school routines[81] can produce shifts toward the recognition and reinforcement of prosocial norms. It is important to match the timing of prevention interventions to children's development and developing behavior.[82]

Social and interpersonal protective factors related to aggression and violence also may be related to buffering the negative emotions associated with adolescent changes and transition to middle school and high school. Social protective factors include a need for autonomy and participation in decision making, strong social supports, and trusting relationships with adults.[83-85] There is evidence that training students in social skills and problem solving is related to reduced conflict, aggression, and violence.[80,84] The training in interpersonal skills may also be related to improving students' sense of life satisfaction. Interpersonal skills and social supports during early adolescence may benefit children before their attitudes and behaviors become set and a negative sense of satisfaction with life and an antisocial behavioral trajectory are established.[86]

Schools are important because they have sustained contact with a majority of children; however, school-based interventions can be difficult to carry out.[82,87] Schoolwide activities consistent with the goals of violence prevention, including constructive discipline, effective classroom management, and an emphasis on tolerance and peaceful resolution of problems have been effective.[80] These schoolwide efforts would serve to increase positive student attitudes toward school, adjustment to (middle and high) school, and bonding with school.

Schools also provide an efficient way to reach a large number of children that avoids issues related to identifying a location, providing transportation, and ensuring program attendance.[88,89] School-based programs also have a greater potential for continuation than program interventions in other settings because they represent stable institutions with relatively fixed staff.[79,80]

Dusenbury and colleagues[90] have suggested 9 critical elements of promising violence prevention programs that merit serious consideration by practioners and researchers. However, a major weakness in current efforts to violence prevention programs involves the period after an intervention ends when students leave the controlled situation of a positive school environment and return to environments where reinforcers and incentives to avoid conflict and violence are not present. The key to success is identifying strategies and programs that can be sustained and generalized across settings. Schools cannot do it alone; partnerships among school, community, and family are imperative to launch successful violence prevention campaigns. Future efforts need to be theory based, multicomponent, multisystem and multidiscipline. Efforts should begin in elementary school and focus on the transition years to middle school and high school. Rigorous evalua-

tion efforts for process, impact, and outcomes that are consistent with theoretical framework and units of assignment and measurement are also important for documentation of program effectiveness.

CONCLUSION

It seems reasonable to conclude from this review of literature that adolescent aggression and violence result from interactions among contextual, individual, social, community, and situational factors. Research suggests that different risk factors are more salient at different levels of adolescent development[83,87] and that the more risk factors present the greater the likelihood of increased violent and/or aggressive behavior. ∎

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