

This video still shows two armed Columbine High School students in the cafeteria during their shooting rampage in April 1999 in Littleton, Colorado.  
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# Risk and Resilience

## UNDERSTANDING THE POTENTIAL FOR VIOLENCE

### INTRODUCTION

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Prevention is at the core of the public health approach to reducing violence. Prevention depends on understanding why violence occurs, who commits violent acts, and who is at risk of victimization. Identifying these parameters requires both a general knowledge of violence and a specific knowledge of the context in which violence occurs. These factors paint a picture of perpetrators, victims, means, and types of violence in a community, which in turn enables communities to design interventions to target those committing violence and to protect those most vulnerable.

At the centre of this targeting approach is the identification of risk and resilience factors. These are factors—whether at the individual, family, community, or societal level—that contribute to increasing the likelihood that an individual will commit a violent act or become a victim of a violent attack, or that aid individuals in adverse circumstances to overcome adversity and avoid violence.

The study of risk and resilience since the 1980s has led to a better understanding of these concepts and of how risk and resilience factors can influence individual behaviour, but experts remain far from creating perfect checklists for identifying future perpetrators. The key challenge to utilizing this approach to prevention is that while identifying risk and resilience factors can assist in defining high-risk groups, it cannot single out which individuals specifically will actually commit acts of violence in the future. This does not reduce the effectiveness of the approach, but it does constrain how it can be used, and poses important questions about how best to use known risk and resilience factors to develop effective violence reduction programmes.

This chapter considers the following questions:

- How are risk and resilience defined?
- What is known about risk and resilience?
- How do risk and resilience factors affect the probability of individuals becoming perpetrators or victims?
- Which risk and resilience factors are important to reducing violence?
- How are risk and resilience factors identified in practice?
- How can an understanding of risk and resilience contribute to the development of effective violence reduction programming?

The chapter is divided into four sections. The first section provides definitions of key terms used in the public health approach, including violence, risk, and resilience. This is followed by a discussion of how risk and resilience factors can be identified in practice. The second section provides an overview of important findings about risk and resilience. It highlights important identified risk factors and points to the key risk factors identified for different types of violence. The third section explains how risk and resilience factors can be used to develop violence reduction

programmes and provides an overview of various types of intervention. The fourth section looks at the prospects for moving forward with public health research to improve knowledge about risk and resilience and to use this knowledge to design more effective interventions in the future.

The main conclusions of this chapter include:

- The more risk factors that exist, and the more domains they involve, the higher is the risk of an individual engaging in violence or becoming a victim of violence. Despite this reality, many individuals in high-risk groups will never commit violent acts, and it remains impossible to predict whether or when a particular individual will commit an act of violence.
- Important risk factors for violence change over the course of an individual's lifetime. Individual and family factors are important in early childhood, while peers, school, and family factors are important during adolescence. In early adulthood social skills, relationships, and employment become important factors. Throughout, substance abuse is an important risk factor for violence.
- The availability of firearms, the lack of regulation of firearm possession and use, the carrying of firearms in public places, the presence of guns in the home, and improper storage of these firearms are all important factors increasing the risk of gun violence.
- Resilience factors play an important role in mediating the negative impacts of risk factors and enabling an individual to avoid or overcome violence. Resilience factors are most effective when there is a high number of resilience factors and low risk, but can be overwhelmed in situations of high risk.
- Diverse settings represent different combinations of risk factors. A general understanding of violence aids in identifying important risk and resilience factors across contexts, while community-specific knowledge indicates the presence of specific factors and provides guidelines for targeting interventions.

**Resilience factors play an important role in mediating the negative impacts of risk factors.**

## UNDERSTANDING RISK AND RESILIENCE

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Understanding violence requires understanding the terms used in defining, studying, measuring, and predicting violence. This section first provides a brief overview of key concepts—violence, risk, and resilience—which forms the basis for the ensuing discussion of how to identify risk and resilience factors in practice.

### Defining risk and resilience

The World Health Organization defines violence as ‘the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation’ (Krug et al., 2002, p. 5). Many of the known risk and resilience factors stem from investigations into delinquency and violence, generally speaking. These are discussed in this chapter. In addition, this chapter also strives to address the risk and resilience factors associated with *armed* violence, when possible. Armed violence is defined here as the use of an instrument or tool to commit an act of violence. This instrument can be a knife, a stick, a broken bottle, a firearm, or any item used to intentionally inflict harm on another individual or oneself (PUBLIC HEALTH APPROACH). This definition incorporates a number of types of armed violence including interpersonal violence, communal clashes, and gang warfare.



For the purposes of this chapter, a risk factor is defined as *any factor that contributes to the increased likelihood of a person engaging in a violent act or becoming a victim of violence*. Risk factors can contribute to violence in three ways. First, a risk factor can contribute to the likelihood of an individual engaging in a violent act. Here the focus is on the risk of someone becoming a perpetrator. Examples of risk factors for perpetration include substance abuse, previous aggressive or violent behaviour, and prior experience of abuse. Second, a risk factor can contribute to an individual's vulnerability to attack. Here the focus is on the risk of an individual becoming a victim. Examples of risk factors for victimization include living in a gang-beset neighbourhood, working in a dangerous job (e.g. as a security guard), or associating with delinquent peers. Third, a risk factor can contribute to the degree of harm inflicted by a violent act. For example, the use of a gun instead of a knife during the perpetration of a violent crime increases the likelihood of numerous and serious injuries.

In identifying risk factors attention has often focused on offenders rather than victims. While this chapter focuses mainly on offenders, the importance of studying victimization to identifying those factors that place an individual at higher risk of becoming a victim should also be noted. For example, a study of child victimization in Turkey suggests that violent physical victimization is common and that victims share common characteristics (Deveci, Acik, and Ayar, 2007). Male children are more likely to suffer violent victimization than female children. Violent victimization is higher for older than for younger children. Violence is higher in families with lower household incomes, with lower levels of education, and where the father is unemployed. Alcohol, unlike in many other places (PUBLIC HEALTH APPROACH), is not a risk factor in Turkey. This is likely the result of the influence of Turkish culture and the Islamic religion and related views on alcohol consumption (Deveci, Acik, and Ayar, 2007, p. 30). Turkish culture also plays a strong role in the high rate of violent victimization of children, including the belief that 'physical punishment of children' is 'culturally and legally' acceptable and only 'excessive punishment' is prohibited (Deveci, Acik, and Ayar, 2007, p. 30). These identified risk factors for both violence perpetration (by the father) and violent victimization (by male children) could be used to design violence reduction initiatives directed at fathers and protective programmes directed at children.

Defining resilience is more complex. For the purposes of this chapter, a resilience factor is defined as *any factor that enables an individual to manage adversity and respond to risk in a positive fashion*. The lack of a common definition and usage of the term 'resilience' has caused confusion (Stouthamer-Loeber et al., 2002, p. 112). Part of the challenge of defining resilience is that it is often used alongside or interchangeably with the terms 'protective', 'moderating', 'buffer', and 'promotive'. Resilience, especially in early studies, was presumed to be simply the opposite of risk. For example, living in a disadvantaged neighbourhood increases one's risk of violence, whereas living in a decent neighbourhood reduces one's risk. However, risk and resilience may not be absolute categories into



Turkish children, some of them holding toy guns, play in Sirnak, near the Iraqi border, in February 2008. © Burhan Ozbilici/AP Photo

which different factors can be neatly separated. Instead, it may be that risk factors have diverse effects on individuals, or that individuals respond to similar situations in different ways. For example, men and women tend to respond differently to risk even when faced with similar circumstances (Dahlberg and Potter, 2001, p. 10).

Important to understanding resilience is the interaction between risk and resilience factors. Resilience requires adversity to present itself (Luthar, Cicchetti, and Becker, 2000a, p. 543), and in the absence of adversity resilience is unlikely to be demonstrated, even though resilience factors might exist. Resilience factors enable an individual to positively adapt in the face of significant adversity (Luthar, Cicchetti, and Becker, 2000a, p. 546), where adversity is represented here as high risk of violence. Resilience factors can also be viewed as contributing to a positive outcome rather than simply negating risk. In this case, resilience is more than just evading violence, but also involves 'doing well' in adverse conditions and maintaining a positive developmental trajectory (Luthar, Cicchetti, and Becker, 2000b, p. 574). This suggests that resilience factors play a major role in explaining why certain individuals who are at high risk of violence never engage in a violent act but instead stay in school, find jobs, and lead productive lives.

An assessment of risk and resilience factors aids in understanding why violence occurs in some circumstances and not in others. However, risk and resilience factors do not cause violence. Instead they influence the beliefs and behaviour of individuals and the decision to commit an act of violence. This distinction is important. It remains necessary to acknowledge the agency involved in committing acts of violence. For example, two male teenagers living in a gang-controlled neighbourhood in single-parent homes still decide which path to take, resulting in one young man joining a gang and the other young man continuing in school, going to college, and moving out of the neighbourhood. While an improved understanding of resilience is expected to provide insight into the success cases that 'shouldn't have been', there are still no clear explanations as to why individuals facing the same circumstances choose different paths.

### Box 8.1 Guiding theories

A number of theories guide the understanding of armed violence. These theories 'provide appropriate starting points for examining' why an individual engages in violence (Saner and Ellickson, 1996, p. 95).

**Social bonding theory** posits that young people are particularly influenced by the relationships they have with their families and their peers during adolescence (Dahlberg and Potter, 2001, p. 8). Based on this theory, an assessment of risk and resilience begins with identifying characteristics of family life, school life, and relationships with peers. These characteristics help to identify risk and resilience factors that can be used to generate profiles of high-risk groups, and the individuals that fit these profiles.

**Social learning theory** recognizes the role of peers, mentors, and adults in the formation of youth attitudes, beliefs, and behaviours (Moore, 2001, p. 2910). Youths look to those around them for role models and learn behaviour by adopting their practices (Bearinger et al., 2005, p. 275). Who these role models are, how they behave, and their attitudes towards violence in turn help to influence how youths develop. Accordingly, youths who have positive family role models, associate with non-violent and non-delinquent peers, and are presented with strong anti-violence norms are at far less risk of engaging in violence than youths whose main role models are violent.

**Problem behaviour theory** highlights the role of past deviant behaviour and attitudes supportive of violence in contributing to future violence (Saner and Ellickson, 1996, p. 95). This theory focuses mainly on the characteristics and past actions of the individual as predictors of violence. For example, youths with histories of serious violence are more likely to display violence later in life (Brook, Brook, and Whiteman, 2007; Loeber and Stouthamer-Loeber, 1998). Youths who possess the attitude that violence is a normal and accepted means of resolving conflicts are also more likely to display violent tendencies or to resort to violence when confronted with adversity. In contrast, youths who have no history of violence and who abhor violence as a tool of conflict resolution are less likely to engage in violent means to resolve conflicts or respond to adversity.

## Identifying risk and resilience factors

Various approaches exist for identifying risk and resilience factors. They include theories of violence (see Box 8.1) and empirical studies of violent incidents (see Box 8.2). This section discusses two approaches in particular and in detail: the ecological model and the pathways model. The former emphasizes the identification of risk factors across various domains at a given time, while the latter focuses on how the risk factors individuals face change as they pass through different stages of development. Both of these models emphasize the need to understand the multiple influences on individual behaviour.

### Box 8.2 Empirical studies

Theories and general knowledge about violence provide the basis for deductively identifying risk factors. Inductive methods can also identify risk factors through empirical studies. Examples include interviews, focus group discussions, survey questionnaires, analysis of media reports, correlation analysis, time-series studies, and case-control studies. The purpose of inductive studies is to collect data that can be used to generate broader generalizations about risk factors.

**Survey questionnaires** pose a series of questions on a range of issues, from 'social, contextual, and demographic information' to 'values, cultural identity, relationship, decision-making skills' (Bearinger et al., 2005, p. 271), attitudes about violence and the use of violence to resolve problems, and measuring how often an individual engages in a range of problematic behaviours (e.g. substance abuse) and violent acts. These questionnaires can elicit 'the most salient risk and protective factors for violence perpetration' in a given community or group of individuals (Bearinger et al., 2005, p. 270). For example, one study of violence among urban Native American youth was able to identify salient risk (e.g. substance abuse and suicidal thoughts and behaviour) and resilience (e.g. strong positive family role models, positive peer groups, positive affect, and connectedness to school) factors (Bearinger et al., 2005, p. 275). With the presence of three protective factors (positive peer groups, positive affect, and connectedness to school), the risk of violence was ten per cent (Bearinger et al., 2005, p. 273). When the two risk factors (substance abuse and suicidal thoughts and behaviour) were added, but the three protective factors maintained, the risk of violence increased to 36 per cent (p. 273). When the number of protective factors decreased to two while the two risk factors remained constant, the risk of violence ranged from 51 to 62 per cent (p. 273).

**Longitudinal studies** measure changes over time. These studies involve the selection of a group for study and follow the development of these individuals through interviews or questionnaires conducted at regular intervals. Conducting this type of study allows for a number of useful measures: how levels of violence increase, decrease, or persist over time; how risk and resilience factors associated with different developmental stages play roles in violent outcomes; and commonalities among persistent, intermittent, and non-offenders. A two-year study of adolescents in the cities of Bogotá, Medellín, and Barranquilla in Colombia provides insight into a number of risk factors in various domains that contribute to high levels of delinquency and violence (Brook, Brook, and Whiteman, 2007, p. 83). A key presumption in this study is that early develop-

mental experiences influence future rates of violence, and that individuals who behave violently during childhood tend to continue to act violently during adolescence and adulthood (p. 84). The study concluded that previous violence indeed predicted future violence, while also noting a number of factors that influenced the likelihood of violence over time, including the use of illicit drugs by parents, the use of illicit drugs by the individual, peer delinquency and drug use, and acts of violence in the home. These factors contributed to continued violence over time due to presumed learning and modelling of behaviour on peers and family as the adolescent ages (pp. 89-92).



After years of substance abuse and jail time for battery, this man—seen with his daughters at a Sioux reservation in South Dakota—is now a counsellor in a domestic violence programme. May 2006. © Katja Heinemann/Aurora/Getty Images

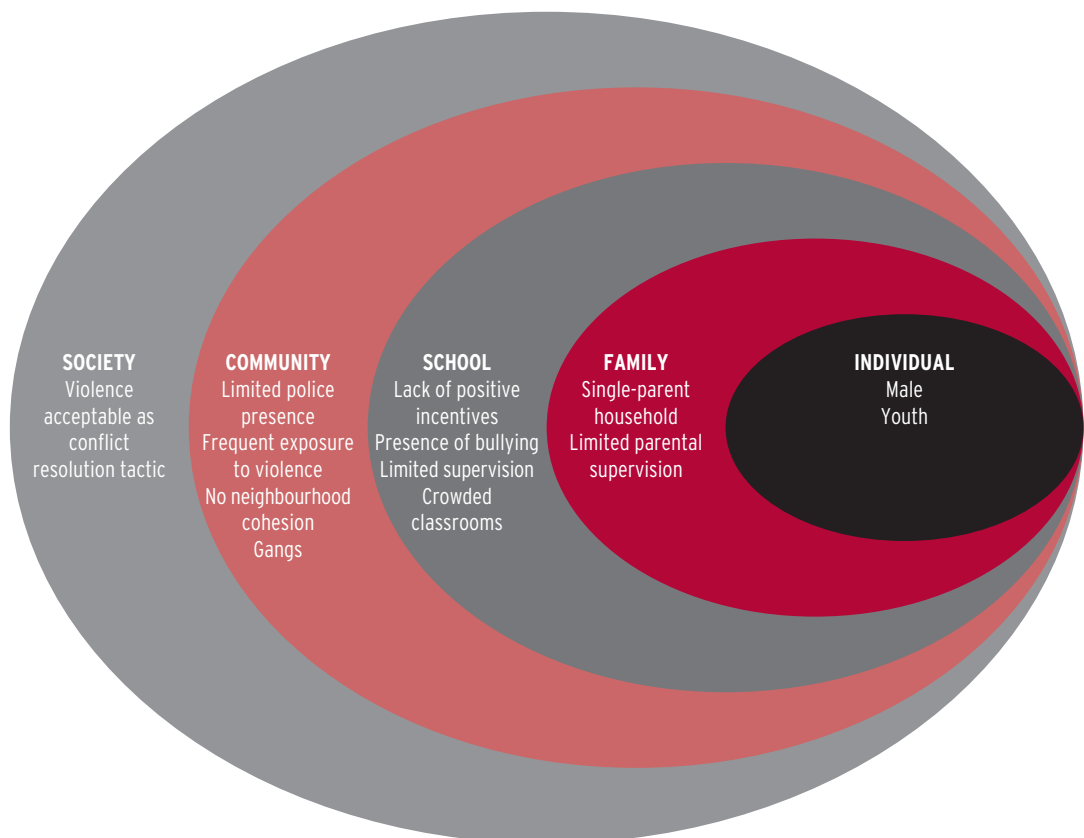
### The ecological model

The ecological model is a useful heuristic device for considering the various factors that can influence risk and resilience patterns and the various domains, or levels, at which these factors operate (PUBLIC HEALTH APPROACH). This model can be thought of as a set of concentric circles around the individual (see Figure 8.1). Each circle is a level, or domain, at which various factors influence the individual. In this model, the individual is situated within a set of environments including the family, school, the community, and society. Each of these domains plays an important role in shaping the context in which the individual lives and how the individual thinks and acts.

As an example of the ecological model, take the situation of a male teenager living in a poor neighbourhood where there are gangs, many single-parent homes, little police presence, high exposure to violence, little supervision of teenagers during their free time, limited neighbourhood cohesion, crowded schools where achievement is not rewarded or positively promoted, bullying with impunity in schools, few options to leave the neighbourhood, and violence is seen as an acceptable form of resolving conflicts. Each of these factors can be placed in its respective domain (see Figure 8.1). By dissecting the different domains of risk, and the various factors that influence youth development and behaviour, a more complete picture emerges of the risk of the individual engaging in a violent act.

The strength of the ecological model is that it recognizes the complexity of violence, the embedded nature of individuals in complex social networks, and the role of a wide range of factors at various levels—from the individual

Figure 8.1 **Ecological model**



to the societal—that influence individual risk, resilience, and behaviour (Rosenberg et al., 2006, p. 761). The ecological framework for studying risk factors within various domains has been used in a number of studies,<sup>1</sup> all of which attempt to answer the question of what influences an individual's decision to engage in violence.

### Pathways model

An important evolution of the work on risk factors for violence is the contention that risk factors do not remain constant over a person's lifetime. Certain risk factors are more dominant at the different stages in a person's development: infancy and childhood, adolescence, and early, middle, and late adulthood (Dahlberg and Potter, 2001, p. 7). At each stage, an individual faces a variety of biological (physical and mental) and social changes and challenges. Different relationships at each stage—familial during childhood, peer-related during adolescence, and marital during adulthood—pose unique challenges to the individual. In addition, as one ages it is common to experience a number of changes in one's environment, neighbourhood, and employment opportunities. Different patterns of risk suggest the need for targeted violence reduction strategies that take into account these life stages.

There are three common patterns of offending: persistent offending that increases in gravity over time, intermittent or limited offending that is non-continuous and often desists over time, and late-onset violence that occurs in adulthood without a prior history of violence (Dahlberg and Potter, 2001, p. 6; Loeber and Stouthamer-Loeber, 1998, pp. 245–46). This suggests different risk factors contribute to the onset of violence and to the desistance from violence, and therefore violence cannot necessarily be viewed as something that begins during childhood and continues through adulthood. However, those who begin on a delinquent-violent trajectory early in life account for the largest proportion of violent adults (Loeber and Stouthamer-Loeber, 1998, p. 245).

**Risk factors do not remain constant over a person's lifetime.**

While long-term offenders represent only a small percentage of the offending population, they commit the majority of violent offences (Brook, Brook, and Whiteman, 2007, p. 82; Dahlberg and Potter, 2001, p. 6; Moore, 2001, p. 2911). This offers good reason to focus on the most serious and most frequent offenders (Stouthamer-Loeber et al., 2002, p. 111), but it also suggests the need to focus on early offenders in order to prevent them from becoming chronic offenders.

Lifetime chronic offenders pass through a series of stages of increased delinquency over time, eventually leading to violence (Moore, 2001, p. 2911; Verlinden, Hersen, and Thomas, 2000, p. 18). This passage through stages of problem behaviour has been described as a 'developmental pathway'. There are three common developmental pathways to violence: overt, early authority conflict, and covert (Loeber and Stouthamer-Loeber, 1998, pp. 247–48). The overt pathway involves the progression of delinquency from minor aggression to physical fighting and then to extreme violence. The early authority conflict pathway consists of less extreme behaviour involving mainly defiance of authority. The covert pathway entails a sequence of escalating behaviours from petty theft to vandalism and then to serious theft.

Individuals can follow different pathways, each of which leads to a distinct outcome in terms of the nature and severity of the delinquency and violence involved (see Figure 8.2). These three pathways are not necessarily independent of one another. Individuals can follow more than one pathway at the same time, or shift from one pathway to another. Individuals can also stop at any step along the pathway, and do not necessarily proceed to the pinnacle of extreme violence and crime. In fact, relatively few individuals make it to the top of the scale of delinquency and violence.



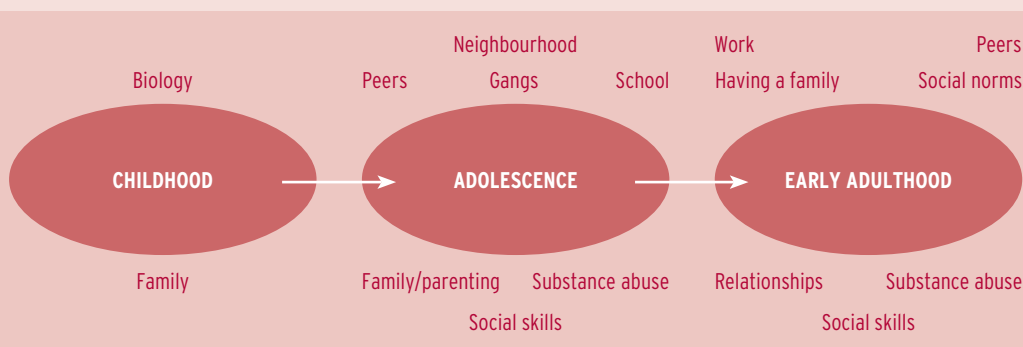
### Box 8.3 Risk factors along the life course

Following an individual's life course is instructive for understanding how risk factors evolve with age. In infancy and early childhood, individual biological factors and family factors play the strongest role in influencing the development of the child, including the child's risk of engaging in or being a victim of violence. Biological factors include any genetic defects, early trauma while in the womb or during birth, personality traits, and cognitive functioning. Family factors include the type of parenting (e.g. level of contact with and stimulation by parents) and the family environment (e.g. whether there is violence or substance abuse in the home). Children learn their behaviours by mimicking those around them, making family life an important setting for learning and a strong contributor to attitudes towards violence and violent behaviour.

Table 8.1 Important risk factors and domains in life stages

Childhood	Adolescence	Early adulthood
Biology Family Parenting	Peers School Parenting Social skills Substance abuse	Substance abuse Social skills Relationships Employment

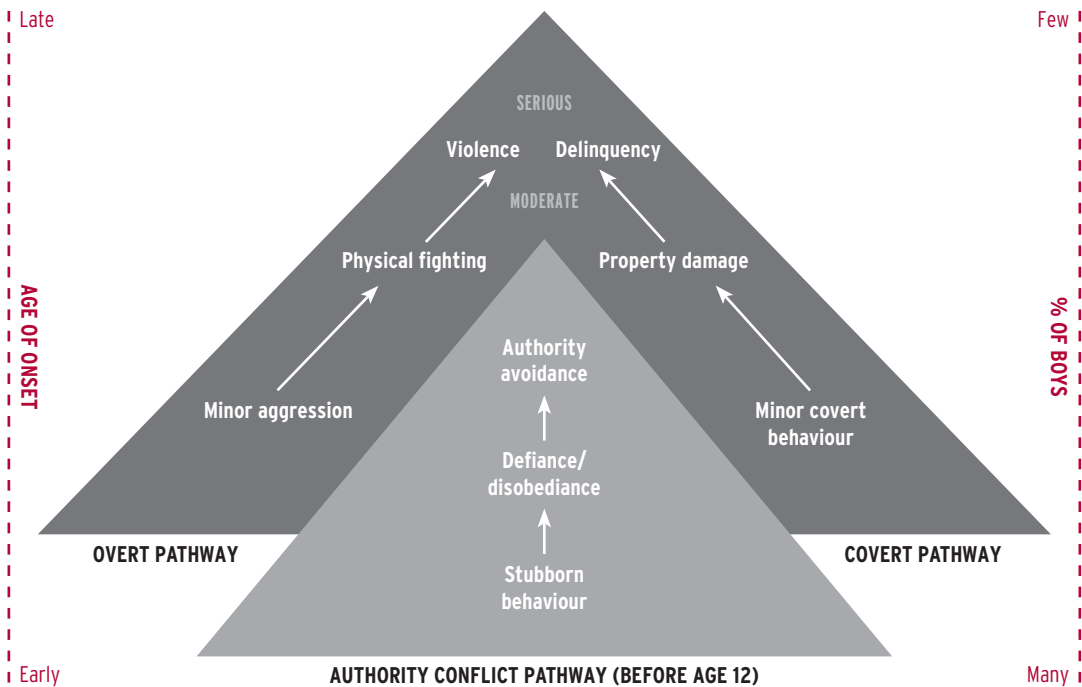
As children move into adolescence they face numerous social, psychological, and emotional challenges. School becomes an important domain for learning at this stage, and social skills play an important role in navigating this new environment. The ability of an individual to interact socially and in a positive fashion contributes to emotional stability, maturity, and integration into school life. Peers serve as strong role models for the development of individual attitudes and behaviours. Interacting with peers who engage in delinquent and violent behaviour increases the likelihood of the individual engaging in this same negative behaviour. The family domain remains important, in particular with respect to family management, parental supervision and support, and the conflict resolution skills of the parents to handle their own challenges as well as to assist a teenager in managing life's growing pains.



In early adulthood, an individual once again faces a new set of challenges, settings, and relationships. These include assuming independence, facing the challenges of finding a job and making a living, and the responsibilities of relationships, marriage, and family. Key risk factors identified at this stage of life include unemployment, relationship difficulties, and substance abuse. After the age of 44, the rate of homicide drops significantly, and in the United States it falls out of the top ten causes of death for both men and women.

Although the level of risk increases as the number of risk factors accumulates, risk is not necessarily cumulative over the course of an individual's life. However, a study of children and adolescents suggests that the accumulation of risk factors during this stage of development is possible. In the study, the older youth exhibited far more risk factors than the children, but the children exhibited a subset of the important risk factors identified for the adolescent group, suggesting at least some carry-over from childhood to adolescence and the accumulation of risk factors with age (Stouthamer-Loeber et al., 2002, p. 120). A key question to be answered is which factors are likely to persist throughout an individual's life and contribute to future potential for violence (e.g. a history of violence, being victimized as a child) and which factors are likely to decline or disappear as an individual ages.

Figure 8.2 Three pathways to boys' delinquency and violence



Source: Based on Loeber and Stouthamer-Loeber (1998, p. 248)

Many violent offenders desist from delinquency and violence as they transition from adolescence to adulthood (Stouthamer-Loeber et al., 2004, p. 913). In a study of youths aged 13–25 in Pittsburgh, nearly 40 per cent of those studied desisted from severe violence, though half of these individuals continued with some form of minor delinquency while the other half desisted completely (Stouthamer-Loeber et al., 2004, p. 907). Serious offenders stop committing violent acts as a result of maturity through aging, rational choice to desist enabled by improved cognitive skills for decision making, the formation of social bonds and informal social controls, as well as a number of other 'biological, sociological and psychological' factors (p. 898). While most of these explanations 'assume that there are key changes taking place in individuals, relationships, contexts, or opportunities that are related in some way to the transition to adulthood', few of these explanations possess the empirical data to confirm their claims (p. 898). The probability of desistance is not the same for all offenders. The most deviant offenders have the lowest prospects for desistance (Loeber and Stouthamer-Loeber, 1998, p. 244). A better understanding of why individuals choose to stop offending could contribute to the design of programmes that encourage such choices.

## IMPORTANT FINDINGS

Research into risk and resilience has produced a number of findings important to advancing the understanding of these factors and their influence on violence. For example, no single risk factor can explain violence. Multiple factors play a role in raising risk levels across various domains. Risk factors are indicators of the potential for violence, not predictors of actual violent events. Context matters, and community and societal level factors can be as important as

individual and family level factors. Attention has focused far more on risk than resilience, leading to greater advances in knowledge about risk factors. This section focuses on these advances.

A wide range of factors contribute to delinquency, poor behaviours, and violence. The difficulty is determining which factors are most important, or most influential in determining a poor outcome, and whether there are some key configurations of factors that lead to violence. It is widely accepted that no one risk factor and no single configuration of risk factors can explain all violence. In fact, it appears that some risk factors may contribute directly to a specific type of bad behaviour or subset of behaviours, while other risk factors can contribute to a wide range of bad behaviours (see Table 8.2), indicating the need to identify clusters of risk factors and clusters of behavioural problems that are interrelated.

Violence cannot be predicted by a single risk factor. Any one risk factor is unlikely to significantly increase the risk that an individual will engage in violence. For example, while the mentally ill have often received blame for violent behaviour, studies suggest that it is not mental illness alone that causes an individual to become violent, but rather a combination of risk factors that create an environment in which mentally ill individuals are more likely to act in a violent manner (see Box 8.4). Risk increases as an individual accumulates risk factors: the more risk factors an individual faces, the higher is the probability that that individual will engage in violent behaviour (Stouthamer-Loeber et al., 2002, p. 111). Risk is thus related to the number of risk factors present, rather than the existence of any specific

**Table 8.2 Risk factors for behaviour problems**

<b>Risk factors</b>	<b>Substance abuse</b>	<b>Delinquency</b>	<b>Teenage pregnancy</b>	<b>School dropout</b>	<b>Violence</b>
<b>Community</b>					
Availability of drugs	X				
Low neighbourhood attachment	X	X			X
Extreme economic deprivation	X	X	X	X	X
<b>Family</b>					
Family management problems	X	X	X	X	X
<b>School</b>					
Early and persistent anti-social behaviour	X	X	X	X	X
Lack of commitment to school	X	X	X	X	
<b>Individual/peer</b>					
Rebelliousness	X	X		X	
Friends who engage in problem behaviour	X	X	X	X	X

Source: Based on Bownes and Ingersoll (1997, p. 3)

### Box 8.4 Identifying violence in the home

'Most seriously mentally ill persons in the public mental health system do not commit violence' (Arehart-Treichel, 2002). Whether mentally ill individuals are predisposed to violence remains a highly controversial topic of research and discussion. While popular images of the mentally ill or the criminally insane have presumed a direct link between mental illness and violence, the evidence to date is inconclusive. Violence rates among the mentally ill vary widely depending on the study conducted, and numerous risk factors have been cited to explain violence by the mentally ill (Arehart-Treichel, 2002). These studies suggest that, while severe mental illness is a risk factor for violence, it is not alone sufficient to cause violence. In other words, other risk factors must be involved as well.

A study at Duke University makes the case that other risk factors play an important role in compounding risk and making 'violence more probable' among those with severe mental illness. The lead author of the study claims that 'acts of violence by people with mental illness are rare' and that 'those with severe mental illness were no more likely to engage in violent behaviours than people in the general population without a psychiatric disorder' (Duke University, 2002). Instead, this study found that certain risk factors in combination with mental illness drastically increased the probability of violence. These factors include childhood violent victimization, current exposure to violence, and substance abuse. The study found that those who possessed none or one of these factors had a predicted probability of violence of two per cent, similar to the rate for the general population without mental illness. However, the addition of other risk factors significantly increased the probability of violence. The addition of a second factor doubled the probability of violence, while the presence of all three risk factors raised the probability to 30 per cent (Swanson et al., 2002, p. 1529).

These findings suggest that a focus on the mental health of the individual is insufficient for violence prevention. Instead, violence prevention efforts should also address the factors that increase the risk of mentally ill persons committing violent acts through safe housing, substance abuse treatment, and clinical support for patients who have experienced physical and sexual victimization as children.<sup>2</sup>

factor or group of factors (Saner and Ellickson, 1996, p. 102; US Surgeon General Report, 2001, ch. 4). Similarly with resilience: the more resilience factors present, the greater is the likelihood that an individual can avoid violence. This raises a number of difficult questions about risk and resilience factors. For example, how many risk factors are necessary before an individual becomes violent? How many risk factors compared with resilience factors are needed to tip the balance towards violence? It remains unclear whether any such thresholds exist (Stouthamer-Loeber et al., 2002, pp. 111–12).

While it is important to consider multiple risk factors, it is also important to understand that these risk factors exist within multiple *domains* (e.g. individual, family, and community) of an individual's environment. Research suggests that the greater the number of domains affected by risk factors, the higher is the probability of violence (Saner and Ellickson, 1996). Effective prevention, therefore, requires programming that addresses multiple risk factors across multiple domains and settings (Bownes and Ingersoll, 1997, p. 2; Moore, 2001, p. 2912; Stouthamer-Loeber et al., 2002, p. 121). Such multidimensional programmes are especially important given that it remains unclear which factors and domains are most influential (Luthar, Cicchetti, and Becker, 2000a, p. 548); such knowledge would provide some indication of how to narrow interventions to target those factors and domains that are most important.

Risk factors are *indicators* of the potential for violence in a given individual or group in the population, though they are much better at indicating the probability of violence in an individual than in the population at large. Risk factors are not perfect predictors of violence. Instead, they indicate a higher likelihood of violence in those who possess numerous risk factors. Thus, while it is possible to identify those at risk of violence given identified risk factors, it remains impossible to predict which individuals specifically will actually become violent offenders. In fact, most *at-risk* youths never become violent (US Surgeon General Report, 2001, ch. 4; O'Toole, 2002, p. 3). Most identified

risk factors come from the study of offending youth, which produces a profile of offenders but does not indicate how they differ from non-offending youth (Saner and Ellickson, 1996, p. 94), or which factors contribute to the small percentage of at-risk youths who do commit violent acts. This raises questions about how known risk factors should be used to design violence reduction initiatives.

If risk factors do not cause violence, then the question remains: what sparks violence in a person at risk of committing violence? One answer is the existence of *triggers* or *stressors* that when activated serve to push a predisposed person into committing an act of violence. These triggers are often 'the straw that broke the camel's back', the immediate spark to spontaneous violence. There are different triggers depending on the context and type of violence. In a gang setting, showing disrespect for a member of another gang might suffice to instigate a fight. In domestic violence there are well-known triggers including disobeying one's husband, not having dinner ready on time, refusing sex, or questioning a husband's activities (Heise, Ellsberg, and Gottmoeller, 2002, p. 58). While studies have identified common triggers, removing these triggers may be more difficult than addressing risk factors due to the speed at which triggers can appear and lead to violent outcomes.

**Triggers can push a predisposed person to commit an act of violence.**

An understanding of the interaction of risk and resilience factors across domains is important. For example, youths who live in abusive households have been found to demonstrate academic success despite their high-risk family life, but these same youths did not demonstrate high levels of social competence, such as the ability to interact easily and well with other students (Luthar, Cicchetti, and Becker, 2000a, p. 548). Individual difference could account for these varying successes and failures across domains. Community context could also play a role. Great variation exists in terms of levels of violence among neighbourhoods (Hawkins, Van Horn, and Arthur, 2004) and this variation is likely based on community characteristics (Stouthamer-Loeber et al., 2002, p. 111). This suggests the need for different approaches in different settings (see Box 8.5). It also indicates that an assessment of individual risk factors must be considered alongside community level factors, but that individual risk factors are likely to have more influence when they are numerous. For example, while youths in high-risk neighbourhoods tend to offend more than those in the general population, young males with high levels of risk (i.e. many individual risk factors) offend at the same rate regardless of their neighbourhood environment (Stouthamer-Loeber et al., 2002, p. 121), suggesting that there is a tipping point at which individual risk factors dominate.

The study of the interaction of risk and resilience factors has provided important insights into how individuals overcome adversity or succumb to violence (Roosa, 2000, p. 567). First, the interaction of risk and resilience factors can elicit a 'protective-stabilizing role' for resilience factors (Li, Nussbaum, and Richards, 2007, p. 22). In this situation, resilience factors mediate the negative impacts of risk factors, thereby protecting the individual from the risk factor and enabling the individual either to avoid or to overcome that risk. This effect is most frequently found when there is a high number of resilience factors and low risk (Li, Nussbaum, and Richards, 2007, p. 22). This has also been called a 'protective but reactive' response, indicating the low level of advantage or protection offered when an individual faces high levels of risk (Luthar, Cicchetti, and Becker, 2000a, p. 547).

Second, resilience may simply prove insufficient to overcome extant risk factors. In this situation of 'overwhelming risk', the high number of risk factors outweighs the beneficial and protective nature of resilience factors leading to adverse outcomes (Li, Nussbaum, and Richards, 2007, p. 22). One study of Chicago youth found that 'none of the minority adolescent males' who lived in high-stress families, faced high levels of risk, and lived in highly dangerous settings exhibited any evidence of resilience (Garbarino, 2001, p. 364). The constant high level of risk simply overwhelmed any ability of the individual to cope with the situation. Similar findings came from a study of combat



### Box 8.5 The urban-rural divide

In general, firearm injury is more common in urban settings than in rural ones. Intentional injury with a firearm is more common in an urban setting. Homicides involving firearms are more common in urban contexts, and tend to cluster in specific neighbourhoods. Gun violence in urban areas often involves the use of handguns, as opposed to other types of firearms. A number of longitudinal studies provide evidence to support this: in urban Milwaukee, 85 per cent of gunshot wounds came from handguns; and in urban Philadelphia 90 per cent of homicides were committed with handguns.

However, rural areas also demonstrate both high levels of firearm access and high levels of firearm mortality. The difference between rural and urban settings appears to be more one of intent and weapon type than levels of firearm injury. In rural areas, while homicides are less common, accidents and suicides pose a big problem in terms of firearm injury. A second difference is that these injuries often result from the use of rifles and shotguns rather than handguns. For example, in a study of rural Wisconsin 60 per cent of gunshot wounds were from shotguns or rifles, while 20 per cent came from handguns.

While these general findings suggest important differences between urban and rural settings, such generalizations should not be overstated. A study of gun deaths in Washington State in the United States revealed that, although differences between rural and urban gun deaths did exist, there were also distinct similarities between them. The differences between rural and urban areas mimicked those discussed above. However, two findings on the similarities between rural and urban areas of Washington State are of particular interest: handguns were the most common type of gun involved in both rural and urban gun deaths, and suicides were the most common form of gun death in both settings. The findings of this study continue to support the common knowledge about the urban-rural divide, but they also point to the need to consider local conditions rather than an unquestioning reliance on generalized findings when designing gun violence prevention strategies.

Source: Based on Dresang (2001)

veterans who had experienced combat conditions for a sustained period, with 98 per cent of those studied exhibiting severe psychiatric problems (Garbarino, 2001, p. 364). In situations of overwhelming risk, it might be difficult to implement strategies to decrease significant risk factors. In these situations, emphasis should be placed on strategies to increase existing resilience factors in an effort to balance out the risk-resilience equation (Stouthamer-Loeber et al., 2002, p. 121) and reduce the negative effects of extremely high levels of risk. Reducing violence is not merely a matter of reducing risk, but also involves bolstering resilience factors.

### Important risk factors

One key question is what the risk factors for predicting violence are; another is what the most important risk factors are. While it is evident that multiple risk factors increase risk, it is still unknown whether some risk factors can contribute more significantly to increasing risk than others, or should be given greater consideration in designing interventions. Ideally it would be best to have not only a list of relevant risk factors in a given context, but also a ranking of these risk factors from most to least important. This would enable a prioritization of risks to be managed when designing interventions. In an ideal world, interventions would be designed to cover all pertinent



An armed 18-year-old drug trafficker stands by shacks in a Rio favela, 2001.  
© Ian Teh/Panos Pictures

risk factors, but the reality is that resources often do not exist for such comprehensive programming. Thus, resources could be better used if primary risk factors could be identified. To date this is not possible.<sup>3</sup> However, it is possible to identify significant indicators of violence, important risk factors for certain types of violence, and the nature of these factors in terms of their potential for modification through intervention.

In terms of intervention, there are three types of risk factor: non-changeable, changeable in the short term, and potentially changeable over the long term. A number of risk factors can potentially be mitigated in the short term (see Table 8.3). The majority of these factors fall within the individual, family, peer, and school domains. They include addressing substance abuse, keeping youths in school, family management training to improve parenting, and social skills training for youth to enable them to integrate better and to handle conflicts in a non-violent fashion. Interventions tend to focus on the individual or the familial level because factors in these domains are easier to target, the targets are more concrete, the scope of programming is more manageable (e.g. an individual or a handful of individuals rather than a community or society), and the scale of programming is smaller (i.e. these programmes can be implemented at the neighbourhood level and do not require national programming).

Key community- and society-level risk factors (see Table 8.2) have proven far more challenging to address. While potentially modifiable, changing these risk factors is difficult and is likely to take a long time, from years to generations, to achieve. These factors include economic inequality, poverty, low economic opportunity, low community participation, disorganized or socially non-cohesive neighbourhoods, the presence of gangs, and cultural norms supportive of at least some forms of violence. Interventions at the community level often entail community watches, hot-spot policing, or gang-reduction initiatives. Interventions at the societal level do take place, but in many cases these tend to be targeted less at violence prevention than at economic and social issues such as inequality, employment, and poverty.

Two important indicators of risk are age and gender. This holds true across the globe: young men are the primary perpetrators and victims of firearms violence.<sup>4</sup> Males are at higher risk than females of engaging in violence. In 2004 homicide ranked among the top six causes of death for both males and females aged 1–34 in the United States, although the percentage of deaths was significantly higher for males than females (CDC, 2008b; CDC WISQARS, 2008). Youth (defined as those individuals between the ages of 15 and 24) are at higher risk than children and adults of engaging in violence. Homicide falls out of the top ten causes of death after the age of 44 for both males and

**Table 8.3 General risk factors for violence**

Individual	Family	Peer	Community	Society
<ul style="list-style-type: none"> <li>• Birth defects</li> <li>• Personality disorders</li> <li>• Early aggressive behaviour</li> <li>• Low academic achievement</li> <li>• Attitudes and beliefs supportive or tolerant of violence</li> </ul>	<ul style="list-style-type: none"> <li>• Weak family bonds</li> <li>• Violence in the home</li> <li>• Poor parental supervision</li> <li>• High levels of stress in the home</li> </ul>	<ul style="list-style-type: none"> <li>• Poor social or interaction skills</li> <li>• Anti-social behaviour</li> <li>• Involvement with delinquent peer groups</li> </ul>	<ul style="list-style-type: none"> <li>• Presence of gangs</li> <li>• Presence of drugs</li> <li>• Presence of arms</li> <li>• Community disorganization</li> <li>• High unemployment</li> <li>• Lack of economic opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• High levels of inequality</li> <li>• High levels of poverty</li> <li>• Social norms supportive or tolerant of violence</li> </ul>

Source: Adopted from IVPA (n.d.)

females in the United States (CDC, 2008b; CDC WISQARS, 2008). Violence and homicide rates vary across the globe, and the lack of cross-national research makes it difficult to compare a country such as the United States, where data is more abundant, with other countries. Studies, however, do suggest that the rates of youth homicide ‘in many low- and middle-income countries greatly exceed those in the United States’ and that these rates are at least three times greater than youth homicide rates in high-income countries (Mercy and Dahlberg, 2004, p. 592).

A third important indicator of risk that has received much attention in the United States is race. Studies suggest that blacks are at a higher risk of violence than other groups (Dahlberg, 1998; Jagers et al., 2007; Loeber et al., 2005). In 1998 homicide rates for blacks were twice the rate for Hispanics and 13 times the rate for non-Hispanic Caucasians (Dahlberg and Potter, 2001, p. 4). In 2004 homicide ranked among the top ten causes of death for black, Native American, Asian, and Hispanic men in the United States, ranking fifth and sixth for blacks and Hispanics, respectively, while not making the top ten for white men (CDC WISQARS, 2008). Homicide has been the predominant cause of death among *young* black men in the United States since the 1990s (Dahlberg, 1998, p. 259; Loeber et al., 2005, p. 1074). Whether this is unique to the United States or whether it is the characteristics and living situation of certain ethnic or racial groups that explain better why the risk is higher for these groups remains unclear. It will be important to broaden research to include other countries to determine whether race and ethnicity are in fact risk factors in other places.

Although age, gender, and race are important indicators of risk, they are not risk factors. Instead, these demographic categories tend to indicate underlying conditions or the presence of significant risk factors. For example, research indicates that statistically in the United States young black males are commonly involved in crime, but none of these three factors (age, race, or gender) causes crime. Instead they indicate other biological, social, and environmental processes and conditions prevalent in the young, male, and in some cases black, population (Ellickson and McGuigan, 2000, p. 571). This suggests that profiling in terms of race, gender, or age may not be especially helpful in reducing violent crime rates as this would require implementing violence reduction programming across entire segments of the population without being able to target the interventions any more specifically than to large demographic categories. While such universal programming is used, there is ongoing debate as to whether this is a cost-effective approach to reducing violence, or whether it makes more sense to focus attention on those groups and individuals deemed to be at the highest risk of engaging in violence. While race, age, and gender can be used to indicate important sub-populations, a better understanding of additional risk factors can help to narrow the focus to high-risk groups within these populations.

**Demographic categories—such as age, gender, and race—can point to the presence of risk factors.**

### **Risk factors for different types of violence**

While the presence of these general risk factors increases the likelihood of violence, the type of violence also matters. While similar sets of risk factors have been identified for similar violent behaviour, such as the link between delinquency and violence (see Table 8.2), there are also indications that certain risk factors might be influential in contributing to specific types of violence. If true, then identifying what is unique to different types of violence in terms of risk and resilience factors could enable the development of more targeted interventions. The following discussion of four types of violence suggests that such ‘profiling’ of types of violence might be possible, and could contribute to identifying key risk factors in these and other types of violence across the spectrum from interpersonal to collective violence.

### Domestic violence

A number of risk factors have been identified for domestic violence, but they mainly pertain to the person perpetrating the violence. They include a history of domestic violence, a history of threatening the partner, unemployment, access to guns, and substance abuse (Campbell et al., 2003). Although the risk factors for a person committing domestic violence may be similar to risk factors for a person committing other types of violence (i.e. they exhibit many general characteristics of high-risk individuals), there are certain important differences in the situation of gender-based violence, and in particular domestic violence that occurs within the confines of the home. Two differences in particular pose higher risks for domestic violence as well as affecting the ability of practitioners to identify domestic violence and intervene to prevent it, namely, the monitoring capacity of the community in which the domestic violence takes place and a community norm that recognizes partner violence as deviant (Browning, 2002, p. 834).

Domestic violence remains a 'hidden' form of violence in many communities and in many countries. This often means there are few witnesses to the actual event, or the witnesses are children or other family members who may be unwilling to report the violence to the police or other authorities. While the effects of such violence might appear

in hospital emergency rooms, there is often a limited capacity to respond to this violence apart from providing proper medical care. The lack of a preventive response results from a number of circumstances: the lack of specific training of medical professionals to either identify victims of abuse or provide support in seeking help, the reluctance of an abused spouse to admit openly what has taken place, and extant cultural beliefs that such marital activities remain a private matter. In these situations, external interventions are less likely to be forthcoming as such interventions would be seen as intrusions into the private lives of individuals.

A second important risk factor involves community norms towards domestic violence. Communities are less likely to provide

a check on domestic violence when the norms of the community tolerate the use of violence within marriage or in punishing children or when there is weak informal social control over community member behaviour. If domestic violence is not viewed as deviant behaviour, then community members are likely to have limited influence over it (Browning, 2002, p. 835). The ability to act collectively is effective in discouraging domestic violence only when community tolerance for such violence is extremely low and social organization is high (p. 838).

This suggests that community values towards domestic violence and levels of social organization are important factors explaining the prevalence of domestic violence. In communities and countries where partner abuse is tolerated, or in some cases encouraged as a form of 'training' one's wife, domestic violence is considered a private matter, women and children are viewed as a husband's possessions, and where women have a low social status the likeli-



A survivor of domestic violence stands by a cut-out figure representing a victim who died as a result of domestic violence in Providence, Rhode Island, May 2001.  
© Victoria Arocho/AP Photo

hood of gender-based violence is higher. The lack of a strong social support network and the lack of viable 'exits' from abusive relationships increase the likelihood that domestic violence will continue (Browning, 2002, p. 848).

### **Gang violence**

Interest in gangs has increased since the 1980s, given the prevalence of gangs and gang violence in a number of cities around the globe. A number of common characteristics of gang violence and gang members have been identified. Gang violence, in particular homicide, is not a random event. Incidents tend to occur between known gangs, and gang members, and often result from battles over 'turf, status, and revenge' (VPC, 2002). While gang violence also affects innocent bystanders who get caught in the crossfire, gang violence remains largely targeted. For example, a study of drive-by shootings in Los Angeles in 1991 found that the vast majority of those committing drive-by shootings were gang members, and that nearly three-quarters (71 per cent) of those injured in these incidents were also gang members (Hutson, Anglin, and Pratts, 1994). In 2001 gangs accounted for 51 per cent of all homicides in Los Angeles County, and the majority of these killings were perpetrated with handguns (VPC, 2002). Gangs exist within a range of communities. Although typically considered an inner-city problem, gangs exist in the inner cities, in suburbs, as well as in smaller communities and rural areas (Esbensen, 2000, p. 1; Hixon, 1999). Gangs are clearly a community problem, and one which requires a multifaceted approach to prevention and violence reduction.

Typically, gang members have been portrayed as young, male, inner-city boys from racial and ethnic minorities living in impoverished conditions who are gang members for life (Esbensen, 2000, p. 3). The situation has changed, but whether as the result of better research, or actual changes in gang membership, or both of these, is not entirely clear. Gangs are increasingly cropping up in non-urban areas. Girls are contributing to larger percentages of gang membership. One study found females accounted for at least one-third of gang members (Esbensen, 2000, p. 3). Gang membership is not restricted to minority groups, and in fact research suggests that previous estimates of extremely high percentages of gang members in the United States being either Hispanic or black might have distorted the reality of the situation (p. 3). In addition, studies have found that not all gang members are members for life. Instead, nearly one-half to two-thirds of gang members are members for one year or less (p. 4).

The key risk factors for youths joining gangs are similar to those for youth violence more generally. Risk factors include delinquency, substance abuse, interaction with anti-social or deviant peers, low commitment to school, poverty, unemployment, and social disorganization, among others. However, research suggests that there are significant differences between gang members and non-gang members, and that gang membership is actually a self-selecting process with most youth avoiding gang membership (Esbensen, 2000, pp. 4–5). If this is the case, then factors must exist that provide the extra influence or incentive to join. The presence of gangs in the neighbourhood and having an older sibling who is in a gang are likely important predictors of gang membership (Hixon, 1999; Kaplan, Valdez, and Cepeda, 2008). Other factors might include feeling unsafe in school or in the neighbourhood and seeking safety through gang membership, or seeking gang membership as one of the few opportunities for economic gain in an economically disadvantaged situation (Kaplan, Valdez, and Cepeda, 2008). Even if these factors persuade individuals to join gangs, there is no clear answer as to why so many individuals do not remain gang members for long. Given that any of the aforementioned risk factors would be highly unlikely to abate within one year, other factors must contribute to desistance.

There are important differences between at-risk youth and youth gang members. Youth gang members are more extensively involved in criminal behaviour than at-risk but non-gang youth. 'Gang members are more likely to commit certain crimes, such as auto theft; theft; assaulting rivals; carrying concealed weapons to school; using, selling, and

**There are important differences between at-risk youth and youth gang members.**



stealing drugs; intimidating or assaulting victims and witnesses; and participating in drive-by shootings and homicides than non-gang youth, even though the latter may have grown up under similar circumstances' (Huff, 1998, p. 4). There are also significant differences in gun possession between gang youth and non-gang youth. In one study, three-quarters of gang member respondents claimed that their fellow gang members owned guns, and that they favoured larger calibre guns; while only 25–50 per cent of non-gang youth stated that their friends owned guns (Huff, 1998, p. 5). In another study, 68 per cent of gang member respondents stated they owned a firearm, 56 per cent claimed they had carried it publicly in the previous 30 days, and 82 per cent claimed they had used a firearm in a gang-related fight (Kaplan, Valdez, and Cepeda, 2008).

### Youth violence

Violence rates among youth remain at high levels in many countries. This suggests that youth face similar challenges, and similar sets of risk factors, across the globe. Youth will of course face culturally specific and context specific factors, which must be taken into account, but a profile of youth violence is emerging as consensus gels around common risk factors in various domains (see Table 8.4).

These lists of risk factors suggest numerous entry points for designing interventions. They also suggest factors that could play a larger role in early life (e.g. in the family and peer domains) as well as the importance of viewing the school environment as not only a positive learning experience but also a potentially damaging one depending on the performance of the individual as well as the nature of the school. This suggests the need for early life-cycle interventions as well as an emphasis on school-based interventions to address not only individuals but also the contextual characteristics of the school itself (see Box 8.6).

### Gun violence

Gun violence is not necessarily a distinct type of violence, but instead refers to the use of firearms during the perpetration of a violent act. Gun violence can include armed robbery, assault, homicide, rape, domestic violence, and drive-by shootings. Violence, in general, is much more common than gun violence, raising the important question of why some individuals opt to use firearms while many others do not.

Civilian possession could offer one explanation, but it is likely to be only one of several factors influencing the risk of firearm violence. For example, even though Australia, Canada, and New Zealand have high rates of gun ownership, they have far lower rates of firearm homicide than the United States, in large part because these 'countries

**Table 8.4 Youth violence risk factors**

Individual	Family	Peer	School
<ul style="list-style-type: none"> <li>• Attention deficit</li> <li>• History of early aggression</li> <li>• Substance abuse</li> <li>• Low cognitive skills</li> </ul>	<ul style="list-style-type: none"> <li>• Exposure to violence in the family</li> <li>• History of victimization</li> <li>• Poor parenting</li> <li>• Severe or erratic punishment</li> <li>• Poor family functioning</li> <li>• Parental substance abuse</li> <li>• Poor supervision</li> </ul>	<ul style="list-style-type: none"> <li>• Associating with delinquent peers</li> <li>• Peer substance abuse</li> <li>• Involvement in gangs</li> <li>• Social rejection by peers</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of involvement in school extracurricular activities</li> <li>• Poor academic performance</li> <li>• Low commitment to school</li> <li>• Poor school environment</li> <li>• School bullying</li> </ul>

A student in Salt Lake City displays his Glock 9 mm semi-automatic handgun on the University of Utah campus in April 2007. 'I want to be prepared,' said the student, who has a concealed weapons permit and carries the gun everywhere but church. © Douglas C. Pizac/AP Photo



do a much better job of regulating their guns' (Hemenway, 2004, pp. 2–3). This suggests that who can access firearms and how the possession and use of firearms is regulated might be more important than simply counting who is licensed to own a firearm.

The availability of firearms is an important risk factor for firearm violence. Availability involves both civilian legal possession and the ability to obtain a weapon both legally and illegally. Suicide rates are higher in homes where guns are present (Hemenway, 2004, pp. 41–44). There is a strong correlation between gun availability and homicide

rates (pp. 49–53). Homicides are facilitated by easy access to firearms. Gun possession also contributes to the escalation of violence during arguments, assaults, and robberies. Most criminals never intend to use their firearms during the commission of a crime, but the carrying of weapons during crimes increases the risk that they will be used (p. 46). 'More people are murdered during arguments with someone they know than during the commission of a robbery' (p. 47).

How firearms are stored in the home is another risk factor for both unintentional and intentional shootings. Improper storage of firearms in the home provides the opportunity for misuse by unsupervised juveniles. Accidental firearm shootings occur when young people find improperly stored firearms and play with them. 'Most shootings of younger children involve firearms belonging to parents or grandparents' (Hemenway, 2004, p. 33). Domestic disputes are more likely to result in death when a firearm is available (pp. 47, 122–23).

Many risk factors for violence in general are cited as risk factors for gun violence; the only difference between violence with a firearm and violence without one is the possession of the firearm (Cukier and Sidel, 2006, p. 49). Yet possession alone does not appear to explain all firearm violence. Countries with similar levels of firearm possession face different levels of homicide. Even within countries, for example the United States, homicide rates vary (INTERVENTIONS). This suggests the need to identify additional risk factors that influence the rate of firearm violence. Some of these potential risk factors have been identified, and include feelings of insecurity, presence of gangs, presence of organized crime and drug trafficking, social norms, and cultural practices (Cukier and Sidel, 2006, pp. 50–51). These factors pertain mainly to demand for firearms, and may not explain their use. An important advance in understanding firearm violence will be identifying whether the mere presence of firearms explains firearm violence, or whether additional factors need to be considered, identified, and addressed via violence reduction programming.

## INTERVENTIONS: USING RISK FACTORS TO REDUCE VIOLENCE

The primary reason for identifying risk factors is to provide a reliable basis for designing violence prevention and reduction programming. This poses key questions about what a practitioner does when faced with a list of risk factors. How can a list of risk factors be turned into a viable programme? While it is essential to ascertain all pertinent risk

factors that influence violent outcomes, it is equally imperative to pinpoint those factors amenable to change. Not all risk factors are equally amenable to change, and some factors are unchangeable. This section first discusses how to utilize risk assessments, or lists of risk factors, to design intervention strategies, and then identifies a range of approaches to intervention design.

### From lists to interventions

Ideally, given a list of risk factors for violence, practitioners would design comprehensive interventions to address all risk factors. Practically, for a variety of financial, resource, political, and institutional reasons, this remains impossible to achieve. The second approach, then, would be to focus interventions on those risk factors that are most important or most influential to an individual becoming violent. This, too, is a herculean task at present given the current inability to rank risk factors according to their degree of importance to the potential for violence.<sup>5</sup> As a result of these challenges, attention has focused on identifying which risk factors are potentially modifiable, what it would take to modify these factors, and then designing interventions targeting these factors.

**Lists of identified risk factors cannot be used as checklists for violence prevention.**

Determining which risk factors are amenable to change is itself a formidable challenge. Ease of change can be measured by asking a series of questions. Which factors require individual behavioural changes? Which factors require individual attitudinal changes? Which factors require familial or community behaviour changes? Which factors require changes to societal norms or practices? Which factors can be altered by changing the circumstances surrounding individual action (e.g. laws reducing availability of firearms or restrictions on access to alcohol)? The public health approach is based on the premise that effective prevention will require changes to attitudes, behaviours, norms, and circumstances. Yet many practitioners believe that it is easier to change the context within which an individual lives than to change an individual's, or a community's, beliefs and behaviour. For example, efforts to reduce access to alcohol during certain times or restrictions on carrying weapons in public have had a positive impact on reducing armed violence (Aguirre et al., 2005). Greater efforts at behavioural and attitudinal change will also be required to prevent violence, despite the immense challenges this poses at the community and societal levels. Programming at the individual and family levels has already demonstrated positive effect through providing individuals with training in social skills, conflict resolution training, and conducting home visits and training in parenting skills (INTERVENTIONS).

It is important to understand that lists of identified risk factors cannot be used as checklists for violence prevention. Currently, when used as screening mechanisms, lists of risk factors produce too many false positives, that is, identifying individuals as offenders who would never actually offend in the future, to be reliable measures for pinpointing future perpetrators (Ellickson and McGuigan, 2000; Loeber et al., 2005, p. 1087; Moore, 2001, p. 2913). In effect, using such lists cannot reliably distinguish perpetrators from non-offenders: 'when the incidence of any form of violence is very low and a very large number of people have identifiable risk factors, there is no reliable way to pick out from that large group the very few who will actually commit the violent act' (O'Toole, 2002, p. 3). This suggests that additional risk factors must be identified that can distinguish between offenders and non-offenders.

The use of lists of risk factors as screening mechanisms can also prove detrimental to individuals (see Box 8.6). This type of profiling can lead to the unfair labelling of at-risk individuals as *dangerous* individuals (O'Toole, 2002, p. 2), which can impose undue stress and harm on these individuals, lead to the singling out of these individuals as troublemakers even though they might not be, and generate unhealthy or fearful family, school, and work environments. In other words, marking individuals as dangerous might actually produce a self-fulfilling prophecy by creating conditions in which the individuals have few opportunities but to act in a violent fashion.

## Box 8.6 School shootings

Several high-profile cases of students shooting students and others in the presumed safety of their school have shocked communities across the United States. The 1999 shooting at Columbine High School killed 15 and wounded 23, making it the largest school shooting in US history until 2007, when a shooting at Virginia Tech left 33 dead and 15 wounded (ANS, 2007; CNN, n.d). These incidents, and many others (see Table 8.5), have led many federal investigators and school administrators to try to determine what makes a student a school shooter, and how school shootings can be prevented.

**Table 8.5 Selected school shootings**

Date	Location	Outcome
December 1997	Kentucky, USA	Teenage student killed three students
March 1998	Arkansas, USA	Two young students killed four students and a teacher
April 1999	Columbine, Colorado, USA	Two students killed 12 students, 2 teachers, and themselves
December 1999	Veghel, Netherlands	Teenage student wounded one teacher and three students
March 2000	Branneburg, Germany	Student killed teacher and himself
April 2002	Erfurt, Germany	Former student killed 14 teachers, 2 students, one policeman, and himself
September 2003	Minnesota, USA	Student killed 2 students
September 2004	Carmen de Patagones, Argentina	Student killed 3 students and wounded 6 others
March 2005	Minnesota, USA	Student killed 9 students and himself
November 2005	Tennessee, USA	Student killed assistant principal and wounded 2 school administrators
April 2007	Virginia, USA	University student killed 32 and himself, and wounded 15 others
October 2007	Ohio, USA	Teenage student injured two students and two teachers and killed himself
November 2007	Tuusula, Finland	Student killed 7 students, the principal, and himself, and wounded 10 others
February 2008	Illinois, USA	Former graduate student killed 7 students and himself, and wounded 15 others

Sources: Based on BBC (2002; 2007); Infoplease (2007)

While the phenomenon has made the headlines most often in the United States, other countries are not devoid of school violence or school shootings (see Table 8.5). Nevertheless, news reporting in the United States would suggest that the occurrence of school shootings is commonplace. It is not. A study of US school shootings between 1992 and 2004 reports that school-related homicide is extremely rare, representing 'approximately 1% of homicides that occur among school-age youths' (CDC, 2008a). Despite these statistics, 'there is a great deal of pressure to compile a list of red flags or characteristics to identify kids that may be school shooters,' but unfortunately such a list 'simply doesn't exist' (Kupersanin, 2002).

Risk factors for school violence are much the same as those for youth violence (see Table 8.3). This does not help much in narrowing the list of potential candidates for school shootings. Youths who exhibit high levels of social isolation and experience high levels of social rejection are more likely to act aggressively (Verlinden, Hersen, and Thomas, 2000, p. 13). Students

involved in school shootings have often exhibited problematic behaviour prior to the shooting, though they did not threaten anyone specifically (US Secret Service, 2002, p. 17). In addition to a focus on the individual, studies have suggested that schools that experience school shootings have a number of characteristics in common. These include overcrowding, poor supervision, school disciplinary policies, lack of a caring attitude among school administrators and teachers, chaotic environments in classrooms, and lack of security (or feeling of security) in the school environment (Verlinden, Hersen, and Thomas, 2000, p. 13). Identifying these characteristics in students and in schools could provide an indication of where to target interventions, but interventions will remain broad in scope. Under these conditions, interventions can concentrate on at-risk groups of students and at-risk schools, but cannot be more specific than this.

Caution should be used in declaring students and schools as 'at-risk' (exhibiting some risk factors) or 'high-risk' (exhibiting many risk factors), especially in the current climate of fear over student shootings. 'Fear generated by the media coverage of the multiple-victim events has been used to justify actions against students by schools that would previously have been viewed as excessive', including the expulsion of students for minor offences (Verlinden, Hersen, and Thomas, 2000, p. 4). Such extreme disciplinary actions can be harmful to students already facing difficult circumstances. The labelling of students as 'high-risk' can also produce adverse effects by leading to these youths being ostracized, encouraging bad behaviour or association with delinquent peers, and reducing the incentives to engage positively in school activities. In extreme cases it could lead to actions being taken against labelled students, including violence, even when these students have never demonstrated an intention to harm.

While producing screening mechanisms for at-risk youths could provide a useful targeting mechanism for interventions, such a mechanism needs to be used with great care so as not to cause more harm than it prevents. This calls for better screening mechanisms because at present they produce far too many false positives. In one study, the false-positive rate was 86.6 per cent for youths with a high number of risk factors for homicide, suggesting the severe limitations of the use of risk-screening at its current level of accuracy (Loeber et al., 2005, p. 1087). It also demands additional means for identifying those who are most likely to commit violence. One proposed identification tool is the utilization of threat assessment methods after a student has made a threat (US Secret Service, 2002). In this situation, the threat is analysed to determine the seriousness of the threat and the risk that the student will carry out the threat. This approach is based on the presumption that not all threats are equal and that 'once a threat is made, having a fair, rational, and standardized method of evaluating and responding to threats is critically important' to responding appropriately to the situation at hand (O'Toole, 2002, p. 1).

A number of programming solutions have been advocated to reduce the number of school shootings and other school violence. These include fostering cultures of respect and safety, fostering relationships between students and teachers, discouraging a 'code of silence' among students that prevents students from informing school officials about students with problems, and actively preventing bullying and punishing bullying when it does occur (US Secret Service, 2002). In cases where guns or other weapons are brought to school, metal detectors can provide a means of detecting these weapons (Astor and Benbenishty, 2006, p. 6). Many schools have 'unowned' areas, such as hallways, playgrounds, and cafeterias, for which no one assumes responsibility, making them prime areas for violent incidents and suggesting the need for school officials to reclaim these areas through the use of monitors to provide supervision and decrease the attractiveness of these areas for violence (Astor, Benbenishty, and Meyer, 2004, p. 45).

A student goes through a metal detector to enter a high school in Philadelphia, Pennsylvania, in October 1999, one day after a school shooting incident.  
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## Designing interventions

Once the relevant risk factors are identified, the next step is to design interventions to address them. There are a number of options. Interventions can focus on a single risk factor or on multiple risk factors. They can focus on a single domain or across domains. Single-factor interventions can be coordinated across domains in order to address multiple risk factors simultaneously. Alternatively, interventions can be designed in a sequential fashion to target one risk factor after another over time. In addition to identifying the risk factors of interest, it is also necessary to identify the target population of the intervention. Different types of interventions will be discussed briefly in this section to provide an overview of the options for programming. Which option is selected will depend on a wide range of financial, personnel, political, and bureaucratic considerations (INTERVENTIONS).

The majority of interventions in the United States focus on changing individual behaviours, attitudes, or beliefs (Dahlberg, 1998, p. 267). These efforts often focus on single traits: building cognitive skills, developing social skills, reducing substance abuse, or modifying an identified undesirable behaviour. Interventions, although less common, also exist at the peer and family levels. At the peer level, efforts are made to improve peer-group interactions, or to persuade individuals to avoid negative peer influences. At the family level, attention focuses on family management, parent training, and developing conflict resolution skills among family members. Community and societal level interventions are far less common. Some interventions at the community level include neighbourhood watch schemes, efforts to improve social organization, as well as targeted policing. Common to all of these interventions is their targeting of single risk factors.

**Table 8.6 Multi-factor interventions**

Type of intervention	Description	Advantages	Disadvantages
<b>Coordinated single-factor interventions</b>	Interventions are coordinated bilaterally by intervening agencies or hierarchically by a central agency	Enables targeted focus on specific risk factors Enables best-positioned agency to conduct intervention Targets multiple risk factors	Difficult to coordinate and manage Requires effective coordination of multiple interventions Requires high levels of coordination among agencies that may not normally work together
<b>Sequenced single-factor interventions</b>	Interventions are staged in a particular sequence to address single factors longitudinally	Enables targeted focus on specific risk factors Enables best-positioned agency to conduct intervention	Difficult to coordinate and manage Question of whether addressing risk factors sequentially rather than simultaneously achieves same effect
<b>Multi-factor interventions</b>	Interventions address multiple risk factors simultaneously in the same programme	Comprehensive Can address numerous factors that raise the risk of particular types of violence Increases likelihood of success Targets multiple risk factors simultaneously	Can produce 'shotgun' approach that covers too many factors in a superficial manner Difficult to coordinate and manage Expensive and complex to implement

**Table 8.7 Targets of interventions**

Type of intervention	Target of intervention	Level of risk and need for prevention	Purpose
<b>Universal</b>	Entire community or population	Average	Reduce risk of violent behaviour
<b>Selected</b>	Identified high-risk groups	Elevated	Reduce risk and prevent occurrence of violent behaviour
<b>Indicated</b>	Individuals who have already exhibited violent tendencies or behaviour	High	Prevent recurrence of violent behaviour

Approaching violence reduction one risk factor at a time has its benefits. It enables a targeted focus on a specific risk factor. It also makes the intervention easier to design and implement. In some cases, it might be the only option available given existing resources. On the downside, single-factor interventions address only a fraction of the risk of any individual or group. If the commonly held assumption is true that high risk is the result of an accumulation of risk factors, then addressing only one of these factors will prove insufficient to address risk, and might have only minimal effect on reducing violence (Wasserman, Miller, and Cothorn, 2000, p. 9). It is increasingly accepted and widely believed that interventions that address multiple risk factors are more effective in reducing risk and lowering levels of actual violence (INTERVENTIONS).

There are three options for designing interventions that address multiple risk factors (see Table 8.6). These include single-factor interventions coordinated through partnerships between implementing agencies; sequenced interventions that address single risk factors one after the other in a coordinated sequence; and multi-factor interventions that address multiple factors in a single intervention. As Table 8.6 suggests, each type of multi-factor intervention has its advantages and disadvantages. The selection of intervention type should be related to the targeted risk factors, but

**Table 8.8 WHO identifies 'top ten' violence prevention strategies**

Increase safe, stable, and nurturing relationships between children and their parents and caretakers
Reduce availability and misuse of alcohol
Reduce access to lethal means
Improve life skills and enhance opportunities for children and youth
Promote gender equality and empower women
Change cultural norms that support violence
Improve criminal justice systems
Improve social welfare systems
Reduce social distance between conflicting groups
Reduce economic inequality and concentrated poverty



selection should also realistically acknowledge the available resources, administrative capacity, political commitment, and community support. In some communities, comprehensive multi-factor interventions cannot be implemented for a variety of reasons (Wyrick and Howell, 2004), and in these contexts other options have to be considered.

In addition to selecting the risk factors to address, the target population of the intervention must also be identified. The target population is often divided into three categories: universal, selective, and indicated (see Table 8.7). Universal interventions target an entire population. Selected interventions target high-risk groups. Indicated interventions focus specifically on problem individuals who have already demonstrated a tendency towards, or actual, violent behaviour (Wasserman, Miller, and Cothorn, 2000, p. 2).

Which population is targeted will depend on the intent of the intervention in terms of both purpose and the risk factors addressed. This decision will also depend on available

resources. Universal interventions are potentially more expensive and more difficult to implement because they address large populations. However, standard programming might be possible in these cases due to the more general nature of these interventions. Selected and indicated interventions target smaller groups of individuals, but arguably individuals who possess characteristics and behaviours that are more difficult to address. While universal interventions are attractive in that they offer the potential to prevent violence, and thereby reduce the need for more targeted interventions, their effectiveness remains unclear. Selected and indicated interventions target those who are most likely to commit violent acts in the future, and therefore could be perceived as being more cost effective if they are successful. Assessments of existing interventions can indicate which types of interventions work best (see Table 8.8) and provide guidance for future violence reduction efforts (INTERVENTIONS).

## MOVING FORWARD

While research on risk and resilience factors has improved general knowledge about factors that contribute to violence, there is still much work to be done. This section highlights the need for a shared understanding of concepts to improve both research and practice, identifies some areas in which additional research should be undertaken, and

suggests concrete goals for future research in order to enhance the effectiveness of interventions and the ability of practitioners to intervene.

Research has identified common risk factors for violence, and for some sub-types of violence. The first step is to improve upon this knowledge, especially in the area of gun violence. The next step is to determine how best to use this knowledge. One goal is to demarcate clearly the differences between offenders and non-offenders in order to better predict the likelihood of violence. This will require expanding studies to include not only known offenders but also those in the general population.

While numerous risk factors for violence have been identified, and statistics on violent acts are more common today, there is far less understanding of why violent offenders stop offending (Stouthamer-Loeber et al., 2004). Key questions include: what factors influence the decisions of individuals to stop committing violent acts? Is it the decline in risk factors or the rise in resilience factors that accounts for desistance? Do individuals simply outgrow the desire or need to commit violence? Are other factors at play? Are any of these factors amenable to external influence through interventions?

More attention needs to be paid to the concept of resilience, to factors that provide resilience, and to programmes that might prove effective in boosting resilience. An important question is which factors aid individuals in maintaining a positive developmental trajectory in the face of extreme adversity. In addition, research should move beyond trying to understand how individuals manage adversity and avoid violence to answer the question of how individuals overcome adversity and actually flourish and 'do well'.

An important aspect of future research will be generating local knowledge about risk and resilience factors for designing community-based interventions. Targeting interventions to local circumstances is essential to avoid basing programming on common stereotypes and media images of violence that can be sensational and misleading, if not outright inaccurate. For example, in the 1980s and 1990s the United States witnessed a resurgence of gang activity alongside the crack cocaine epidemic, which produced predictions of 'a new cohort of superpredators (young, ruthless, violent offenders with casual attitudes about violence)' who would be responsible for a rising number of homicides as well as the stereotype of the 'drug-crazed, drug-dealing, gang-banging gang member' that depicted all gang members, inaccurately, as 'marauding, drug-dealing murderers' (Esbensen, 2000, p. 2). Basing interventions on such stereotypes leads to poor policy and ineffective programming.

An important step forward would entail research aimed at ranking risk factors and risk domains. Currently, the large number of important risk factors and domains identified in violence research makes it difficult to design interventions that comprehensively address all relevant factors and domains. A better understanding of the degree of influence of each risk factor and domain could contribute to improving the targeting of interventions towards those factors that are most important in increasing risk and most cost effective to change. If the most important risk factors can be identified, then practitioners will know where to focus their attention, efforts, and resources. ■

## ENDNOTES

- 1 Bownes and Ingersoll (1997); Brook, Brook, and Whiteman (2007); Dahlberg (1998); Dahlberg and Potter (2001); Saner and Ellickson (1996); and US Surgeon General Report (2001).
- 2 For a complete discussion of this study and its findings, see Swanson et al. (2002).

- 3 Cicchetti and Curtis (2007, p. 628); Luthar, Cicchetti, and Becker (2000a; 2000b, pp. 573–74); Moore (2001, p. 2913).
- 4 For a more detailed discussion, see Small Arms Survey (2006, ch. 12).
- 5 Luthar, Cicchetti, and Becker (2000a; 2000b, pp. 573–74); Cicchetti and Curtis (2007, p. 628); Moore (2001, p. 2913).

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