Preventing youth violence: an overview of the evidence

World Health
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prevention

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Preface

Each year an estimated 200 000 youth aged 10–29 years are murdered, making homicide the fourth leading cause of death in young people globally. In addition to these deaths, millions of young people sustain violence-related injuries that require emergency medical treatment, and countless others go on to develop mental health problems and adopt high-risk behaviours such as smoking, alcohol and drug abuse, and unsafe sex as a result of their exposure to youth violence. The emotional toll of youth violence on its victims, their loved ones and friends is high, and youth violence shatters lives. These consequences also have high economic costs, both for society and for the families of those affected.

Youth violence does not "just happen". On the contrary, whether in the shape of bullying at school, alcohol-related violence in bars, clubs and private spaces, gang violence, or violence associated with the illegal drug trade, youth violence is often predictable and therefore preventable. The last decade has witnessed steady growth in the number of scientifically published studies describing how programmes to reduce the factors that give rise to youth violence and strengthen those that protect against it have significantly lowered rates of victimization and perpetration. Much of this literature derives from high-income countries such as Australia, Canada, the United Kingdom and the United States, where, at a national level, homicide rates and other youth violence indicators have shown substantial declines over the past decade. However, there is also a growing number of success stories from low- and middle-income countries where the problem of youth violence is particularly severe, and several of these are described in this manual, along with pointers on how to establish policies supportive of youth violence prevention programming.

The aim of this manual is to help policy-makers and planners everywhere – particularly in settings with limited human and financial resources – to address youth violence using an evidence-informed approach. The manual provides a science-based framework for understanding why some individuals are more likely to become involved in youth violence than others and why youth violence is more concentrated in particular communities and sectors of the population than in others. This framework incorporates a life-course approach that recognizes how behaviour in the present is shaped by earlier developmental stages. It also takes into account how youth violence is influenced by characteristics of the individual; family and peer relationships; and features of the community and society, such as economic inequality and high levels of alcohol consumption.

WHO's involvement in youth violence prevention reflects the important stake the health sector has in the prevention of interpersonal violence more generally. For instance, the health sector treats the victims of violence, incurring major financial costs in doing so. Health services see a substantially larger proportion of all victims of violence than are reported to the police and other authorities, and are thus well placed to inform and evaluate prevention programmes. The health sector also plays a key role in designing and implementing youth violence prevention interventions such as programmes to reduce the harmful use of alcohol.

However, health is just one of several sectors whose contributions are essential if youth violence prevention success is to be achieved and sustained. This document is therefore an invitation to multisectoral action, first and foremost on the part of the criminal justice sector (which along with the health sector bears the brunt of youth violence) and the education, social development and social protection sectors, which play a critical role in regulating exposure to the risks for youth violence and strengthening factors that protect against it.

Adoption in May 2014 by the World Health Assembly of Resolution 67.15 on preventing interpersonal violence, in particular against women and girls, and against children, reaffirmed the importance of health sector participation in multisectoral efforts to prevent violence. It also highlighted the importance of addressing the links between different types of violence, such as child maltreatment, youth violence and intimate partner violence. *Preventing youth violence: an overview of the evidence* therefore provides another link in the chain of evidence-based prevention. I hope this manual will serve to strengthen this chain by expanding the quantity and quality of youth violence prevention programmes and studies that evaluate their effectiveness, in low-, middle- and high-income countries.

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Executive summary

Violence is defined as "the intentional use of physical force or power, threatened or actual, against another person or against a group that results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment, or deprivation"*(1)*. Research and programmes addressing youth violence typically include people aged 10–29 years, although patterns of youth violence can begin in early childhood.

Worldwide, an estimated 200 000 homicides occur each year among youth and young adults aged 10–29 years, making homicide the fourth leading cause of death in this age group. Eighty three percent of homicide victims in this age group are male, and nearly all of these deaths occur in low- and middle-income countries *(2)*. For each young person killed, many more sustain injuries requiring hospital treatment. Beyond deaths and injuries, youth violence can lead to mental health problems and increased health-risk behaviours, such as smoking, alcohol and drug use, and unsafe sex. Youth violence results in greatly increased health, welfare and criminal justice costs; reduces productivity; decreases the value of property in areas where it occurs; and generally undermines the fabric of society. Accordingly, effective youth violence prevention programmes can improve a broad range of health, education and social outcomes, leading to potentially substantial economic savings.

Youth violence is influenced by risk factors at different levels and at different life stages of an individual. At the individual level, risk factors can include a history of involvement in crime; delinquency and aggressive behaviour; psychological conditions such as hyperactivity and conduct disorder; and the harmful use of alcohol and illicit drugs. Close relationship level risk factors include growing up with poor parental supervision; having experienced harsh and inconsistent discipline by parents; parental involvement in crime; and associating with delinquent peers. Risk factors at community level include neighbourhood crime; gangs and a local supply of guns and illicit drugs; ease of access to alcohol; unemployment; high levels of income inequality, and concentrated poverty. Youth violence prevention programmes are designed to reduce the risk factors that give rise to youth violence or else mitigate the negative effects on individuals and communities where the risk factors remain prevalent.

Although the burden of youth violence is highest in low- and middle-income countries, almost all studies of prevention effectiveness come from high-income countries, in particular Australia, the United Kingdom and a few other western European countries, and the United States of America. The largest proportion of outcome evaluation studies concern strategies that address risk factors at the individual and close relationship levels, and there are fewer outcome evaluations for community- and society-level strategies. While it is important that prevention efforts target children at an early stage, few longitudinal studies measure the effects of interventions delivered in early childhood on subsequent youth violence outcomes. Bearing these limitations in mind, the table below provides an overview of youth violence prevention strategies reviewed in this document and what is known about their effectiveness. The strategies are grouped into four categories based on the context in which they are delivered.

The table shows that while for each of the implementation contexts there is at least one strategy that is promising for preventing youth violence, many strategies are of uncertain effectiveness because of insufficient evidence. In early childhood, teaching positive parenting skills and early childhood development programmes were both rated as promising, and home visiting as requiring more research to establish its effectiveness in preventing subsequent youth violence.

Among the school-based strategies, life and social skills development programmes, and bullying

Effectiveness of youth violence prevention strategies, by context

Parenting and early childhood development strategies	Home visiting programmes	?
	Parenting programmes	+
	Early childhood development programmes	+

School-based academic and social skills development strategies	Life and social skills development	+
	Bullying prevention	+
	Academic enrichment programmes	?
	Dating violence prevention programmes	+/-
	Financial incentives for adolescents to attend school	?
	Peer mediation	+/-
	After-school and other structured leisure time activities	?

Strategies for young people at higher risk of, or already involved in, violence	Therapeutic approaches	+
	Vocational training	?
	Mentoring	?
	Gang and street violence prevention programmes	?

Community- and society-level strategies	Hotspots policing	+
	Community- and problem-orientated policing	+
	Reducing access to and the harmful use of alcohol	+
	Drug control programmes	+
	Reducing access to and misuse of firearms	+
	Spatial modification and urban upgrading	+
	Poverty de-concentration	+

KEY

+ Promising (strategies that include one or more programmes supported by at least one well-designed study showing prevention of perpetration and/or experiencing of youth violence, or at least two studies showing positive changes in key risk or protective factors for youth violence).

? Unclear because of insufficient evidence (strategies that include one or more programmes of unclear effectiveness).

+/- Unclear because of mixed results (strategies for which the evidence is mixed – some programmes have a significant positive and others a significant negative effect on youth violence).

prevention programmes are both rated as promising, whereas academic enrichment programmes, financial incentives for adolescents to attend school, and structured leisure time activities were found to require more research as to their effectiveness. Dating-violence prevention and peer mediation programmes were found to have contradictory evidence on their effectiveness, with peer mediation programmes also being shown in some studies to have harmful effects in the form of increased youth violence.

Of the strategies for youth at higher risk of violence, only therapeutic approaches (such as cognitive behaviour therapy) for youth already showing aggressive behaviour emerged as promising in

preventing youth violence, with vocational training, mentoring, and gang and street violence prevention programmes having insufficient evidence to assess their effectiveness.

At community and societal level, hotspots policing; community- and problem-orientated policing; reducing access to and the harmful use of alcohol; drug control programmes; reducing access to and the misuse of firearms; spatial modification and urban upgrading, poverty de-concentration were all rated as promising in preventing youth violence.

When considering the applicability of a specific youth violence prevention strategy within a low-resource setting, it is important to recognize that many presuppose the existence of well-functioning institutions such as primary health care systems and schools, and the existence of legitimate and accountable policing and criminal justice systems. Where such conditions are not present, specific youth violence prevention programmes that depend upon these institutions are unlikely to be effective. Preventing youth violence thus requires a comprehensive approach that also addresses the social determinants of violence, such as income inequality and low levels of social protection, and which strengthens the institutional mechanisms, resources and human capacity needed to ensure the just, effective and accountable enforcement of laws.

The public health approach to violence prevention highlights the importance of collecting data on the magnitude and pattern of youth violence, and using such data to inform the design and implementation of interventions. It also requires that evidence on effects is fed back into the preventive system to enable continuous monitoring and ongoing improvements. The public health approach is explicitly multisectoral, involving input from sectors such as education, health, justice, social protection and trade and industry. It involves four steps.

1. Define the magnitude, scope, characteristics and consequences of such violence through the systematic collection of statistical information from routinely available sources and surveys.
2. Identify the risk and protective factors that increase or decrease the likelihood of youth violence, including those that can be modified through interventions.
3. Determine what works in preventing youth violence by developing and evaluating interventions tailored to the demographic and socioeconomic characteristics of the groups in which they are to be implemented.
4. Implement effective and promising interventions in a wide range of settings and, through ongoing monitoring of their effects on the risk factors and the target problem, evaluate their impact and cost-effectiveness.

While the public health approach provides an easily understood framework for organizing youth violence prevention efforts, the main challenge lies in getting governments and other violence prevention stakeholders to adopt such an approach in the first place. In many settings the idea that youth violence can be prevented is likely to be new, and it is therefore important to build the necessary human and institutional foundations before attempting to initiate a public health approach to the problem. This can be done by systematically:

- raising awareness about prevention;
- developing partnerships across sectors;
- strengthening knowledge about the importance of data collection on fatal and non-fatal youth violence, and on risk and protective factors;
- enhancing the capacity to evaluate existing prevention programmes;
- establishing a policy framework, and
- building capacity for youth violence prevention.

Youth violence is not a simple problem with easy solutions. However, significant improvements in prevention, especially in low-resource settings, are possible. There is enough knowledge and experience on the subject for any country to begin addressing the problem.

Introduction

This manual reviews what is known about the prevalence and consequences of youth violence, the underlying risk factors and scientific studies on the effectiveness of youth violence prevention programmes. It also provides brief notes on how to strengthen youth violence prevention efforts. The prevention programmes covered by these studies are grouped into 21 youth violence prevention strategies under which the evidence for the effectiveness of the specific interventions in each strategy is reviewed. Each strategy's relevance to low- and middle-income countries (where youth violence rates are highest) is explored, and the manual describes the human resources and institutional arrangements needed to support implementation of each strategy.

The goal of this manual is to help reduce the number of young people who are harmed by youth violence and who perpetrate it. Achieving this goal requires effective prevention policies and programmes. By taking action to prevent youth violence and simultaneously generating evidence for its effectiveness, progress to achieving this goal can be accelerated.

Who should read this manual?

The manual provides an overview of current evidence for what works to prevent youth violence, and its intended readership includes policy- and decision-makers in governments, civil society organizations and other institutions that implement or are interested in the implementation of youth violence prevention programmes.

The content of this manual is relevant for various sectors, including ministries responsible for providing health, legal and social services, the criminal justice and education sectors, ministries of the interior; and authorities that play a role in regulating youth violence risk and protective factors, such as alcohol and firearms, and access to social protection.

The manual is also relevant for technical staff in organizations such as international development agencies and foundations that provide financial and technical support for youth violence prevention programmes, and researchers interested in better understanding what works to prevent youth violence and collaborating with those who implement programmes to conduct outcome evaluation studies.

How was this manual developed?

Development of this manual started in 2012 with a consultation of around 50 youth violence prevention experts from all regions of the world on what its scope and content should be. Through this consultation, 21 strategies often implemented with the goal of preventing youth violence were identified. Published literature (in English, French and Spanish) from 1998 to 2013 on the effectiveness of interventions encompassed by the prevention strategies was then retrieved and reviewed. Initial reviews were conducted using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) framework criteria that inform the development of WHO's evidence-based guidelines *(3)*.

To avoid drawing possibly misleading conclusions from single studies of any particular intervention, GRADE is applied only to meta-analyses and systematic reviews that examine multiple independent studies of an intervention. Application of GRADE revealed that across almost all interventions making up the 21 youth violence prevention strategies, there were either too few meta-analyses and/or systematic reviews to rate the evidence, or that where multiple meta-analyses and systematic reviews did exist, they had major information gaps and inconsistencies that made the pooling and comparison of findings

impossible. These included failure to specify the characteristics of the intervention and/or target groups; the use of divergent outcomes, and failure to provide dose-response information.

The results of these reviews were then discussed in a face-to-face meeting of 15 youth violence prevention experts from most geographical regions, with a focus on exploring the relevance of the findings for their countries and regions; potential pitfalls in implementing the strategies, and their applicability in low-resource settings. The group concluded that formal recommendations for or against any of the strategies could not be made. Instead, and in line with other areas in public health where the evidence base is similarly inconsistent, it was agreed to present narrative descriptions of the review findings in a catalogue format that applies a standard template to each strategy. Based on these discussions, a draft version of the manual was prepared, and then peer-reviewed and finalized.

Overview of the content

Chapter 1 provides data on the magnitude, distribution and consequences of youth violence.

Chapter 2 presents an overview of risk and protective factors associated with youth violence, and which should be the focus of interventions to prevent youth violence.

Chapter 3 reviews evidence for the effectiveness of the 21 youth violence prevention strategies and their applicability in low- and middle-income countries.

Chapter 4 outlines practical steps that can be taken to organize multisectoral youth violence prevention efforts, and describes the human resources and institutional arrangements needed to support such efforts.

1

Youth violence definition, prevalence and consequences

Definitions: youth violence in context

The *World report on violence and health (1)* defines violence as, "the intentional use of physical force or power, threatened or actual, against 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", (p.5). The report further defines youth violence as violence that occurs among individuals aged 10–29 years who are unrelated and who may or may not know each other, and generally takes place outside of the home. Examples of youth violence include bullying, physical assault with or without a weapon, and gang violence. High rates of perpetration and victimization nevertheless often extend as far as the 30–35 years age band, and this group of older young adults should be taken into account when trying to understand and prevent youth violence *(4)*.

Youth violence is closely linked to other forms of violence, including child maltreatment, intimate partner violence and self-directed violence: these types of violence have common risk factors and one can be a risk factor for the other (e.g. child maltreatment is a risk factor for later involvement in youth violence). It is therefore useful to view youth violence within a wider categorization of violence. Following the typology presented in the *World report on violence and health (1)*, violence can be divided into three broad categories, according to the context in which it is committed.

- Self-directed violence is subdivided into suicidal behaviour and self-abuse. The former includes suicidal thoughts, attempted suicides and completed suicides. Self-abuse, in contrast, includes acts such as self-mutilation.
- Interpersonal violence refers to violence between individuals. The category is subdivided into family and intimate partner violence, and community violence. The former includes child maltreatment, intimate partner violence and elder abuse. Community violence is broken down into violence by acquaintances and violence by strangers. It covers youth violence, assault by strangers, violence related to property crimes, and violence in workplaces and other institutions.
- Collective violence refers to violence committed by larger groups of people and can be subdivided into social, political and economic violence.

Crosscutting each of these categories is the nature of violent acts. The nature of acts can be physical, sexual, emotional or psychological, or one of neglect. The classification of violence according to both type and nature of the violent act, as shown in Figure 1, is useful for understanding the place of youth violence within patterns of violence more generally.

FIGURE 1
A typology of violence
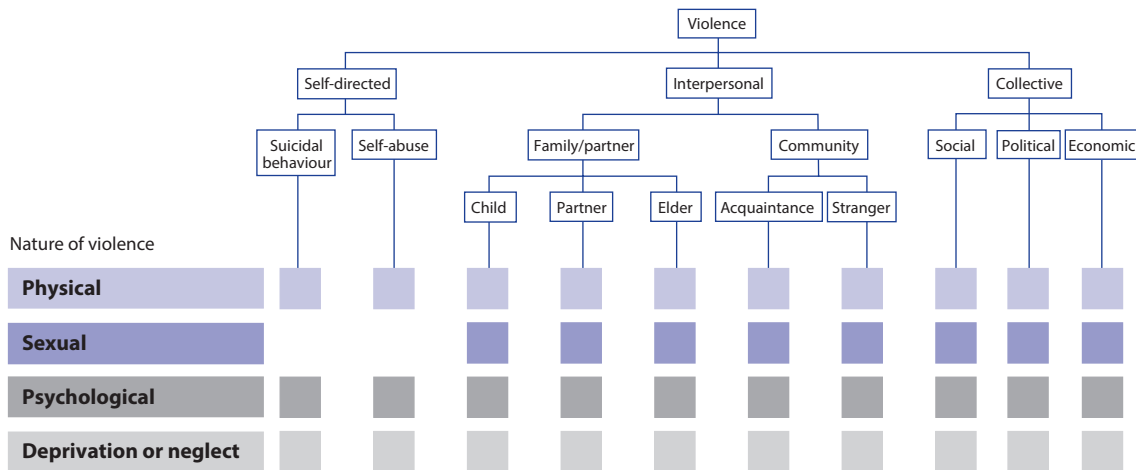
Source: *(1)*

Youth violence often occurs alongside other types of violence. For instance, maltreated children are themselves at increased risk in later life of either perpetrating or becoming the victims of multiple types of violence – including suicide, sexual violence, youth violence and intimate partner violence. The same set of factors – such as harmful levels of alcohol use, family isolation and social exclusion, high unemployment and economic inequalities – have been shown to underlie different types of violence. Strategies that prevent one type of violence and that address shared underlying factors therefore have the potential to prevent a number of different types of violence (5).

Youth violence: magnitude, distribution and consequences

The availability of data on the magnitude of the youth violence problem is best represented by a pyramid. Violent deaths are the most visible outcome of violent behaviour recorded in official statistics, yet represent only the apex of the pyramid. Next are victims of youth violence that come to the attention of health authorities and receive some form of emergency medical, medico-legal or other care. The third, much broader layer at the base of the pyramid includes acts of youth violence (e.g. bullying) that may never be reported to health or other authorities. Population-based surveys are therefore critical to documenting the overall prevalence and consequences of youth violence. However, with the exception of school-based surveys of self-reported involvement in physical fighting and bullying, such surveys are lacking for most countries and regions. Of course, not all victims of violence are willing to disclose their experiences of violence even in a confidential interview, and the base of the pyramid also comprises the many victims of youth violence who suffer in silence. For instance, one study found that 30% of children who suffered violence at school did not tell anybody about their experience (6).

As evident from the information presented in this section on fatal and non-fatal youth violence, the patterns and consequences of violence are not evenly distributed among countries and regions, or by sex. Whereas males are disproportionately represented among victims of violent death and physical injuries treated in emergency departments, females are more likely to be victims of dating violence and sexual violence. Both male and female victims of youth violence suffer a host of negative health and social consequences from these acts of violence that often last a lifetime and that are not captured in official statistics.

Homicide

Each year an estimated 200 000 homicides occur in young people aged 10–29 years. Of these homicide victims, 83% are male and nearly all of these deaths occur in low- and middle-income countries. Homicide is the fourth leading cause of death in young people globally (see Table 1).

There are large national and regional variations in the rates of death resulting from youth violence. In some countries of Latin America, the Caribbean, and sub-Saharan Africa, estimated youth homicide rates are a hundred or more times higher than rates for countries in Western Europe and the Western Pacific, which have the lowest youth homicide rates.

Figure 2 shows estimated homicide rates by age and sex, worldwide, in 2012. In the age groups 0–4 and 5–9 years, homicide rates in males and females are roughly the same, although twice as high in the 0–4 year age group as in the 5–9 year age group.

TABLE 1

Top 10 causes of death in persons aged 10–29 years, 2012, world

Road traffic injuries   **361 515**[a]
HIV/AIDS   **293 920**[a]
Self-harm   **256 180**[a]
Homicide   **205 303**[b]
Maternal conditions   **151 036**[a]
Lower respiratory infections   **138 151**[b]
Diarrhoeal diseases   **123 236**[a]
Drowning   **105 576**[a]
Meningitis   **82 032**[a]
Ischaemic heart disease   **72 038**[a]

Sources:
[a] Global health estimates: deaths by cause, age, sex and country, 2000–2012. Geneva; World Health Organization
[b] Global health observatory data: violence prevention, homicide estimates 2012 (http://www.who.int/gho/violence/en/)

FIGURE 2

Homicide rates by age and sex, 2012, world
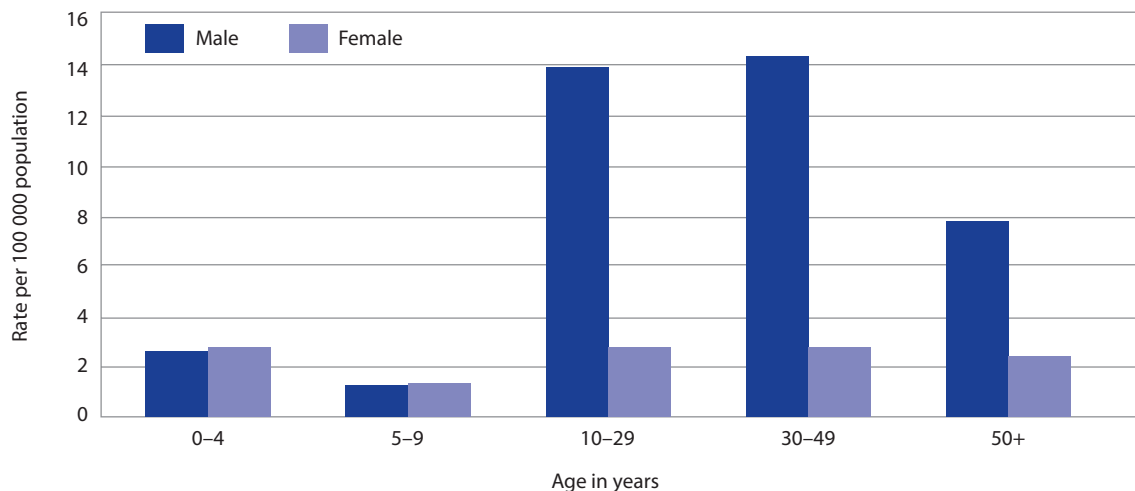
Source: World Health Organization. Global health observatory data: violence prevention, homicide estimates 2012. (http://www.who.int/gho/violence/en/).

Among youth aged 10–29 years, homicide rates for males surge to over six times those in males aged 5–9 years, and for females the rates more than double. Homicide rates for males and females aged 30–49 years remain very similar to those in the 10–29 year age group, and for the age group 50 years and over, rates among males reduce substantially, while rates in females remain relatively unchanged.

Non-fatal youth violence

The prevalence of non-fatal youth violence is best measured by counting violence-related injuries among youth that receive emergency medical care, and through population-based surveys on self-reported involvement in violence. Police and criminal justice data are useful in identifying the number of cases reported to these authorities. However, studies show that for each case of youth violence reported to the police, there are several more that receive hospital emergency care but that are not reported to police (7, 8). Reliance on police data alone is therefore likely to severely underestimate the true magnitude the problem.

Youth receiving hospital emergency treatment for violence-related injuries

The treatment of non-fatal injuries resulting from youth violence constitutes a major burden on health systems. For example, in a nationally representative study of violence-related injury cases presenting at emergency departments during a 1-month period in Brazil, there were 4835 cases of violence-related injury, of which 91% were victims of interpersonal violence. More than half of the victims (55%) were aged 10–29 years (9). In the USA, 1 643 801 people were treated in emergency departments in 2013 for injuries sustained in an assault, of whom 50% were aged 10–29 (10). In Cape Town, South Africa, analysis of 9236 consecutive trauma centre admissions from October 2010 to September 2011 showed that assault with a sharp instrument (21%) or blunt object (17%) were the two most common mechanisms of injury, that over 70% of all cases were males, and 42% were aged 18–30 years (11).

Self-reported victimization and perpetration

The Global School-based Student Health Survey (GSHS) is one of the few cross-nationally comparable sources of information on self-reported involvement in youth violence. The GSHS uses nationally representative surveys of students aged 13–15 years and has been implemented in over 100 countries

(12). Table 2 shows the prevalence of self-reported physical fighting (as a victim and/or perpetrator) in the past 12 months, and bullying victimization in the past 30 days, for selected low- and middle-income countries during the period 2003 to 2013.

TABLE 2

Percentage of youth aged 13–15 years reporting being involved in a physical fight or bullied, by sex, selected countries (various years between 2003 and 2013)

	PHYSICAL FIGHTING (PAST 12 MONTHS)		BULLIED (PAST 30 DAYS)	
	MALE	FEMALE	MALE	FEMALE
African Region				
Benin	35%	27%	43%	41%
Botswana	54%	42%	53%	52%
Malawi	24%	21%	43%	47%
Swaziland	27%	14%	33%	31%
Region of the Americas				
Bolivia	45%	21%	32%	28%
Dominica	48%	30%	29%	26%
Honduras	36%	21%	32%	32%
Jamaica	61%	39%	40%	39%
Eastern Mediterranean Region				
Egypt	62%	29%	70%	70%
Iraq	50%	22%	32%	22%
Morocco	57%	26%	17%	21%
Qatar	63%	38%	49%	35%
South-East Asian Region				
Indonesia	48%	20%	55%	45%
Maldives	45%	17%	45%	39%
Myanmar	21%	8%	23%	16%
Thailand	47%	21%	32%	23%
Western Pacific Region				
Malaysia	45%	17%	45%	39%
Mongolia	63%	19%	37%	20%
Philippines	44%	32%	47%	48%
Samoa	73%	62%	79%	69%
All regions (average)				
	47%	26%	42%	37%

Source: World Health Organization. Global school-based student health survey. (http://www.who.int/chp/gshs/en/) *(12)*

Table 2 shows the very high prevalence of both physical fighting and bullying. Across all countries, nearly one in two males reported involvement in physical fighting during the past 12 months compared to one in four females. By country, the prevalence of physical fighting ranged from a low of 21% in Myanmar to a high of 73% in Samoa, and for females from a low of 8% in Myanmar to a high of 62% in Samoa. Sex differences were less pronounced for bullying, with a cross-country average of 42% for boys and 37% for girls. The highest reported prevalence of bullying was in Egypt, where 70% of both boys and girls reported having been bullied in the past month, and lowest in Morocco (17% boys and 21% girls).

The second International Self-Report Delinquency Study collected data on perpetration of violence among 12–15-year-old students in 63 cities and 31 countries mainly in Europe and the Americas *(13)*. Past-

year prevalence rates for serious violence varied between 1.5% and 8%, depending on the country and city. Unfortunately, comparable information for other WHO Regions is lacking.

Dating violence prevalence

Dating violence is an early form of intimate partner violence, occurring primarily in adolescence and early adulthood. A systematic review *(14)* of studies on the prevalence of dating violence in North America and Europe found that 4.2–46% of girls and 2.6–33% of boys experienced physical dating violence during adolescence. However, definitions of dating violence used in the various studies differed, as did the measuring instruments, making precise comparisons impossible. In Africa, a South African study *(15)* of 928 males and females aged 13–23 years found that 42% of females and 38% of males reported being a victim of physical dating violence during adolescence or early adulthood. In Ethiopia, nearly 16% of 1378 male college students reported physically abusing an intimate partner or non-partner, and 16.9% reported perpetrating acts of sexual violence *(16)*.

Sexual violence prevalence

The reported prevalence of sexual violence among young people in dating relationships varies from 1.2%–32.9% for females, and from 1%–19% among boys in North America and Europe *(14)*. According to demographic and health survey data for selected low- and middle-income countries *(17)*, the percentage of girls aged 15–19 years who have ever experienced forced sexual intercourse ranges from zero among adolescent girls in Kyrgyzstan, to 22% among girls in the same age range in Cameroon. Among girls and women aged 15-49 years, the percentage reporting forced sexual initiation ranges from 1% in Timor-Leste to 29% in Nepal.

Consequences of non-fatal youth violence

Given the extremely high prevalence of self-reported involvement in non-fatal youth violence, it is unsurprising that the number of deaths resulting from youth violence is overshadowed by the very substantial burden of injuries, mental health problems and negative behavioural consequences caused by youth violence. For each young person murdered, it has been estimated that at least 20–40 young people are admitted to a hospital with serious violence-related injuries inflicted during assault and robbery *(4)*. Other forms of youth violence – such as bullying, slapping, or hitting – can cause more emotional harm than physical harm, and, as noted above, are often documented through population based self-report surveys.

Unfortunately, in comparison to child maltreatment and intimate partner violence against women, fewer studies have addressed the non-injury health and social consequences of youth violence. This hampers the potential to advocate for prevention since it creates the misleading impression that the consequences of youth violence are short-term and mainly physical. A priority in the coming years must therefore be to better understand and quantify the immediate and long-term effects of involvement in youth violence on health risk behaviours, mental and physical health outcomes, and involvement in subsequent violence including self-directed, interpersonal and collective violence. Another important gap in youth violence research is around its direct and indirect economic costs – while these have started to be assessed in the Americas, they are poorly measured in other regions of the world.

Injuries. Injuries caused by youth violence include lesions to the head, neck and face, and extremities. Most common are open wounds, followed by fractures, concussions and scalds to the head and neck. Violence-related injuries also include frequent injuries to the thorax, the abdomen, and the upper and lower extremities. The most common injuries in a study in an emergency room in Jamaica were stabbings (52.1%), blunt injuries (37.9%) and gunshot wounds (7.3%) *(18)*. According to data from the United States, gun violence tends to lead more often to injuries of the upper and lower trunk and extremities *(10)* while violence committed with knives and other sharp instruments is more often associated with injuries to the head, upper extremities and lower extremities. Injuries can have a range of long-term consequences

and can cause disability. Violence is, for example, among the three most common causes of spinal cord injury (19).

Health risk behaviours. A number of studies have shown that violent victimization in adolescence has adverse effects on physical and psychological health. For instance, experiencing youth violence has been associated with health risk behaviours such as smoking, harmful use of alcohol and illicit drugs, physical inactivity and higher stress levels. Several of these behaviours are in turn risk factors for noncommunicable conditions such as cardiovascular diseases. A study that compared data from the GSHS in eight African countries (20) found that bullying was closely related to increased cigarette, alcohol and drug use, and risky sexual behaviour, and that the health risk behaviours increased with the number of days during which the young person was a victim of bullying. Health risk behaviours often arise as a means of coping with depression as a direct consequence of youth violence (21). The association between youth violence and health risk behaviours may be two-way, since adolescents with health problems tend more often to be victims of violence, while violence in turn leads to more health problems.

Mental health consequences. Being a victim of violence influences psychological well-being over the life course. Experiencing youth violence as an adolescent is associated with mental health problems such as post-traumatic stress disorder, depression, anxiety disorders and a wide range of psychological dysfunction. These problems can persist throughout adolescence and adulthood. Many studies have explored the links between being exposed to bullying and the likelihood of suffering depression later in life, and one meta-analysis of their findings estimates that students exposed to bullying and violence in school are 30–50% more likely to suffer depression seven to 36 years later (22).

Increased risk of involvement in further violence. Exposure to violence in early childhood and adolescence can lead to engaging in other types of violence, including further youth violence, child maltreatment and intimate partner violence. Youths who have perpetrated or suffered violence during childhood are three times more likely to perpetrate violence later in their life (23), and children who witnessed parental violence are more likely to perpetrate youth violence (24). In one United Kingdom study, half of males currently engaged in serious violence were victims of violence in the past, compared with only 12% of non-violent youth (25). Being a bully increases the risk of perpetrating violence later in life by more than half, and being a victim of bullying increases the risk of later becoming a perpetrator of violence by 10%.

Impact on families and friends. Youth violence and its consequences not only change the life of the immediate victim, but also affect their family members and friends. Relatives and close friends of youth violence victims are significantly more likely to show symptoms of depression; negative behaviours directed towards the environment, such as disobeying rules, physical aggression, vandalism, or threatening others, and drug use and harmful use of alcohol (26).

Wider social and economic consequences

Educational under-achievement. Youth violence perpetration and victimization are related to low academic achievement. Those who are involved in youth violence show lower educational performance and are more at risk of school dropout or truancy. According to a survey conducted in the United States, about 6% of children reported not going to school on one or more days in the 30 days preceding the survey because they felt unsafe at school, or on their way to and from school (27). There is evidence that physical aggression in middle childhood predicts school dropout (28).

Economic costs. Youth violence is often accompanied by the destruction of goods and infrastructure, and can lead to decreased property values in areas that are considered hotspots for violence (4). Violence committed by juveniles is particularly costly to society. Costs for victims include direct medical costs, future earning losses, public programme costs, property damage and losses of quality of life. Costs for

perpetrators include probation costs, detention costs, treatment programme costs, incarceration costs and earning losses. Youth violence may harm local businesses and the local economy in areas where prevalence is high, and leads to substantial healthcare and criminal justice costs. In addition, there are intangible costs for societies, including costs associated with increased insecurity, fear and suffering, and reduced social cohesion. In the United States, for example, direct medical costs and lost earnings associated with youth violence amount to US$ 20 billion annually *(10)*.

2

**Risk factors
for youth
violence**

Why do some young people engage in violence while others do not? Why do some children in schools get along well with others, while others frequently get into trouble? Why do youth violence rates in one community differ from those in a neighbouring community? Answering these questions entails identifying the causes of and risk factors for youth violence, and the factors that may protect against it. A better understanding of these causes, and risk and protective factors, is essential for the development of prevention programmes. Prevention efforts must eliminate or reduce the risk factors that young people are exposed to, and strengthen protective factors.

Risk and protective factors are aspects of a person, group or environment that make youth violence more or less likely to occur. A risk factor is a characteristic that increases the likelihood of a person becoming a victim or perpetrator of violence, or of a place having high rates of youth violence. The more risk factors that accumulate in an individual or in a particular setting, the higher the likelihood that the individual will become involved in youth violence or that violence occurs in a certain setting *(29)*. Risk factors occur at the level of the individual, family and peer relationships, the community, and society. Importantly, factors occurring in infancy or early childhood can significantly increase the likelihood of involvement in violence later in adolescence and adulthood.

Protective factors

Youth violence researchers and planners increasingly focus on protective factors, which include direct protective factors and buffering factors. Direct protective factors predict a lower probability of violence, whereas buffering factors predict a low probability of violence in the presence of risk. It is important to consider protective factors, because even in high-risk groups of children, over half will not grow up to engage in serious youth violence. As with risk factors, protective factors can occur at the individual, family and close relationship, community, and society levels; and, the more protective factors that accumulate within an individual or a geographical setting, the lower the likelihood of youth violence *(30)*.

Direct protective and buffering factors identified to date include above-average intelligence; low levels of impulsiveness; pro-social attitudes; close relationships to parents; intensive parental supervision; medium socioeconomic status; strong ties to school; having non-deviant peers; and living in a non-deprived and non-violent neighbourhood *(30)*.

Table 3 provides an overview of the risk factors most consistently found to be related to youth violence by the developmental stage and ecological level at which they occur. Most risk factor studies are from North American and European countries *(31, 32)*. While many of these risk factors may apply universally, there are also culture-specific risk and protective factors.

Of the risk factors identified in Table 3, some have stronger and more consistent associations with youth violence, while others appear to be less consistently predictive of youth violence but may still be important in some settings.

Risk factors most strongly associated with youth violence
Involvement in crime and delinquency

Being involved in crime or delinquent behaviour is one of the most powerful and most consistent risk factors for later youth violence. According to one meta-analysis of longitudinal studies *(33)*, juvenile offences are the strongest predictor of subsequent violent or serious delinquency even if the offence did not involve violence.

Antisocial peers and lack of social ties

A lack of social ties and involvement with antisocial peers are both strongly associated with youth violence *(33)*. Being involved with friends who engage in aggressive, violent or delinquent behaviour

TABLE 3

Risk factors for youth violence by developmental stage and ecological level

ECOLOGICAL LEVEL	DEVELOPMENTAL STAGE					
	CONCEPTION AND EARLY INFANCY 0–1 YEAR	INFANCY 1–3 YEARS	CHILDHOOD 4–11 YEARS	EARLY ADOLESCENCE 12–14 YEARS	LATE ADOLESCENCE 15–18 YEARS	EARLY ADULTHOOD 18–29 YEARS
Individual risk factors		Attention deficit, hyperactivity, conduct disorder or other behavioural disorders				
	Male sex					
	Genetic factors					
	Low intelligence					
				Involvement in crime and delinquency		
		Low academic achievement				
	Parental drug use			Illicit drug use		
				Harmful use of alcohol		
	Child maltreatment					
					Unemployment	
Family and close relationship risk factors		Poor parental supervision				
	Harsh and inconsistent discipline by parents					
	Divorce of parents					
	Teenage pregnancy					
	Parental depression					
	Family history of antisocial behaviour					
	Unemployment in the family					
	Harmful alcohol use during pregnancy					
				Delinquent peers		
				Gang membership		
			Bullying perpetration and victimization			
Community and society level risk factors	Access to alcohol					
	Illicit drug markets					
			Harmful use of drugs			
	Access to firearms					
	Poverty					
	Inequality					

increases the risk of a young person's involvement in violence. One study found that having antisocial peers was associated with violent crime, bullying, and aggressive behaviour *(34)*. Gang membership is associated with a 10–21% higher likelihood of violent offending *(35, 36)*. The direction of the association between antisocial peers and youth violence is not clear; some studies suggest that antisocial peers may reinforce antisocial behaviour *(37)*, and others that young people who are already prone to violent behaviour selectively choose antisocial peers *(38)*.

Alcohol and drugs

At the individual level, alcohol use directly affects cognitive and physical functioning and can reduce self-control and the ability to process information and assess risks. It can increase impulsiveness and make particular drinkers more likely to engage in violent behaviour. Young people who start drinking early and drink frequently are at increased risk of perpetrating – or being a victim of – youth violence. At community and society levels, crowded and poorly managed drinking venues contribute to increased aggression among drinkers *(39)*. Several studies confirm that violent incidents often occur in situations of alcohol intoxication *(40, 41)*.

One study has shown that involvement in drug selling between the ages of 14–16 years tripled the risk of involvement in violence *(42)*. Having access to drugs might also reflect neighbourhood circumstances that provide opportunities for and reinforce deviant behaviour. A longitudinal study in the United States found that frequent use of alcohol, marijuana, and/or other illicit drugs was strongly associated with involvement in violence *(43)*.

Sex

Young men are at far greater risk than females for becoming perpetrators and victims of youth violence. About 90% of fatal violence is perpetrated by males and 83% of all youth homicide victims are male. Female involvement in youth violence resulting in non-fatal physical injures remains inadequately studied in many countries. In the USA, females represent 20% of all arrests for violent crime among those aged 10–29 years *(44)*. In addition, female youth are at greater risk of victimization in dating relationships, sexual violence and intimate partner violence.

Socioeconomic status

Being raised in poverty has been found to contribute to a greater likelihood of involvement in violence, and poverty both in the community and at the level of individual households has been shown to predict violence *(45)*. Youth from families with lower socioeconomic status are at twice the risk of involvement in violent crime as youth from middle- and high-income families *(46)*. Adolescents growing up in families where one or both parents are unemployed are at higher risk of youth violence *(47)*. Socioeconomic status of parents is associated with a higher risk of bullying or being bullied *(48)*. Some studies find that poverty and economic inequality are positively associated with national homicide rates, and that this relationship is particularly strong in males aged 20–24 years *(49)*.

Parental involvement in antisocial behaviour and crime

Antisocial behaviour tends to be concentrated within families. Parents that demonstrate antisocial behaviour are more likely to have children who do the same. A population-based study in Sweden *(50)* examined the family relationships of persons who had been convicted for violent crime. The study found that the likelihood of having been convicted for a violent crime was four times higher in those with a sibling that had been convicted of a violent crime, and two times higher for those with a cousin that had been convicted of a violent crime. A number of studies from other geographical settings found similar outcomes, such as the study from Cambridge, United Kingdom *(51)*, which found that 63% of boys with convicted fathers were themselves found guilty of crime (including violent crime), compared to 30% of those whose relatives had not been convicted.

Aggressive behaviour and history of involvement in violence

Aggression and violent behaviours tend to develop early in the life course, and many adolescents engaging in youth violence have histories of juvenile delinquency and patterns of disruptive behaviour in early childhood *(52)*. Children who manifest disruptive behaviours or childhood aggression, and children diagnosed with conduct disorders, are also at increased risk of youth violence. The appearance of aggressive behaviour before the age of 13 years consistently predicts later violence among males. Many researchers have confirmed that there is continuity in antisocial behaviour from early aggression to violent crime *(53)*. One study found that 20% of the most aggressive males at ages 8–10 years were convicted of a violent offence by the age of 32 years, compared with 10% of those who did not show aggressive behaviour in childhood *(54)*. Another study found that students involved in school bullying were over twice as likely to be involved in violent offending 11 years later *(22)*.

Child maltreatment

Child maltreatment includes physical abuse, sexual abuse, emotional abuse and neglect of children. Children who were victims of child maltreatment are more likely to show antisocial and violent behaviour in childhood and adolescence compared with non-maltreated youth *(55, 56)*. Evidence also suggests that children who have been physically abused or neglected are more likely than others to commit violent crimes later in life *(57)*. One study found that of 900 children, those who had been abused or neglected before the age of 11 years were more likely to be arrested as juveniles and as adults, and more likely to be arrested for juvenile violence *(58)*.

Parenting skills and parent child relations: supervision, discipline, bonding

Several aspects of the parent-child relationship can predict a child's later involvement in delinquent and violent behaviour. These include supervision of the child; parental discipline and reinforcement; the quality of the emotional relationship; and parental involvement with children. Several studies have shown that parents who routinely do not know where their children are, and who often leave their offspring unsupervised, are more likely to have children that become involved in delinquent or violent behaviour *(30)*. In the Cambridge-Somerville study in the United States, poor parental supervision could predict violent crimes up to age 45 years *(59)*. Harsh or punitive discipline has also been shown to predict future violence *(60)*.

School attitude/performance

Low academic achievement, poor bonding with school, frequent changes of school, truancy and dropping out are all risk factors for youth violence. Poor academic achievement consistently predicts later delinquency. Bonding to school is a protective factor against violence, although this relationship is weak. Youth with high truancy rates are more likely to engage in violence as adolescents and adults, and leaving school early also predicts later violence *(42)*.

Psychological conditions

Several psychological variables associated with impulsiveness predict violence including hyperactivity, concentration problems, restlessness, risk taking, low self-control, and sensation seeking. Children and youth with attention deficit-hyperactivity disorders have a higher likelihood of manifesting aggressive behaviour and becoming involved in youth violence *(61)*. Such personality and behavioural traits have been linked to certain nervous system conditions and genetic predispositions that, combined with adverse childhood environments, can increase the risk of violent behaviour *(62)*.

Other risk factors for youth violence

Beyond the risk factors most strongly associated with youth violence are several others that should be considered. The weaker relationship between these risk factors and youth violence is partly the result of a lack of research into some of them, and in others, contradictory findings across different studies.

Individual level risk factors

Low intelligence. Several studies show that intelligence is moderately associated with delinquency and violence *(63, 64)*. A longitudinal study in 120 men in Stockholm, Sweden found that low intelligence measured in children aged 3 years significantly predicted crime records up to the age of 30 years, regardless of social class *(65)*. One study tested various explanations of the relationship between low intelligence and violence, and that which seems to hold most promise is the school performance model, which assumes that having low intelligence reduces the ability to compete and perform well in school, thereby increasing the likelihood of involvement in delinquent subcultures *(66)*.

Family and close relationship risk factors

Adolescent parents. Children born to adolescent parents have a higher likelihood of developing antisocial behaviour and behavioural problems *(31)*. Many young women who become pregnant as adolescents were sexually and/or physically abused at some point in their lives *(67)*.

Parental mental health and alcohol abuse problems. There is increased risk of antisocial behaviour in children whose parents suffer depression. This relationship has been studied particularly among mothers, although a few studies of fathers with depression suggest similar findings *(68)*. More research is needed to identify whether successful treatment for depression is associated with a decline in children's antisocial behaviour. Several longitudinal studies have found that children of parents who use alcohol in harmful ways are at elevated risk of antisocial behaviour *(69, 70)*.

Community-level risk factors

Growing up in a neighbourhood with high levels of crime. Growing up in neighbourhoods with high levels of crime has been identified in many studies as a risk factor for youth violence *(52)*. Being exposed to crime, drug selling, gangs and poor housing predicts the likelihood of youth violence *(1)*. One study found that children who knew many adult criminals were more likely to engage in violent behaviour by the age of 18 years than those who did not *(42)*.

Society-level risk factors

Access to firearms. International cross-sectional studies involving mainly high-income countries show that countries with higher levels of firearm availability have on average higher levels of firearm-related deaths *(71, 72)*. Meta-analysis studies also suggest that at the level of individual households, firearm-related deaths occur more frequently in households with guns, compared to those without guns *(73)*. None of these studies is specific to homicide in youth, although – because youth account for a high proportion of all homicides in most settings – they are likely to be highly relevant to youth violence.

Social protection. Social protection mechanisms have been shown to have a negative association with national homicide rates *(49)*, *(74)*, suggesting that economic policies which strengthen social protection can mitigate the social and economic consequences of those living in poverty, and are protective against violence.

Social determinants, including rule of law

Violence of all types is strongly associated with social determinants such as weak governance, poor rule of law, cultural, social and gender norms, unemployment, income and gender inequality, rapid social change and limited educational opportunities (2). Together these factors create a social climate that is conducive to violence, and in the absence of efforts to address them, sustained violence prevention gains are difficult to achieve. Any comprehensive youth violence prevention strategy must therefore identify ways to mitigate or provide a buffer against these risks, including through policy and other measures. As part of a multisectoral approach to violence prevention, additional efforts must be made to strengthen and support relevant institutions in the justice and security sectors, as well as health, education and social sectors, to ensure that prevention strategies are effective in addressing these social determinants (2).

In relation to poor rule of law (one of the most pertinent social determinants of youth violence), strategies to enable safe reporting of interpersonal violence and ensuring that legal protection and support are available to all citizens are of particular importance (75). In other circumstances, the threat of criminal sanctions can have a deterrent effect, for instance on people with strong social ties to the perpetrator or when the certainty – but not necessarily the severity – of sanctions is high. An important objective for youth violence prevention is therefore to strengthen collaboration between public health, the criminal justice sector and key security institutions such as the police in order to increase the chance that potential perpetrators of violence will be prevented from committing crime in the first place (and if not, at least held accountable for their actions). Where necessary, support such as strengthening financial and human resource capacity on the part of relevant institutions can help to improve enforcement levels.

Use of risk factors for developing and planning interventions

Resources to prevent youth violence are scarce. It is therefore important that interventions target individuals, families and communities most at risk of becoming involved in youth violence. From the risk factors described above, it is clear that some subgroups of the population and communities are at higher risk of youth violence than others, and so should therefore be prioritized by prevention efforts. It was also noted that because several risk factors are relevant at different periods of development, care must be taken to ensure that interventions are age appropriate.

When deciding about what risk factors to address, factors to consider are:

- how strongly is the risk factor associated with a particular youth violence outcome?
- how can data on the risk factor be collected?
- how frequent is the risk factor?
- how feasible it is to change exposure to the risk factor with an intervention?
- how much does it cost to address the risk factor?

Risk factors for youth violence are not the same in all regions of the world, and most of the risk factor studies cited above are from high-income countries. However, other studies have shown that a range of risk factors apply across settings (76, 77). Nevertheless, there will usually be risk factors that are specific to a particular setting which are important for programme designers to identify and address.

Information on risk factors in your country or setting can be retrieved from various sources such as:

- household surveys of child maltreatment and family violence;
- statistics about single-headed households;
- statistics on alcohol consumption and alcohol sales, or the use of self-brewed alcohol;
- indicators of income or financial wealth of communities;
- unemployment statistics;
- statistics from schools (e.g. findings from the GSHS); and
- published literature about risk factors.

3

What is the evidence for youth violence prevention?

This chapter provides an overview of the current state of scientific knowledge on the effectiveness of 21 youth violence prevention strategies. It is important to note the following limitations of the evidence base for youth violence prevention.

- Although the burden of youth violence is higher in low- and middle-income countries, almost all studies of prevention effectiveness come from high-income countries, in particular Australia, Canada, the United Kingdom, the United States, and a few Western European countries *(78)*.
- Within the pool of existing studies, the evidence is unevenly distributed over different ecological levels. The largest proportion of interventions and outcome evaluation studies concern strategies that address risk factors at the individual and close relationship levels, and far fewer community- and society-level interventions have been evaluated *(78)*.
- In line with the fact that the largest proportion of interventions are at the individual and close relationship level, most outcome evaluations describe programme effects on risk factors for youth violence such as attitudes and behaviours. By contrast, community- and society-level strategies can be evaluated for their effects on direct measures of youth violence, including rates of homicide and non-fatal, assault-related injuries treated by emergency departments, and self-reported victimization and perpetration *(79)*.
- Despite the importance of prevention efforts that target children at an early stage, few longitudinal studies measure the effects of interventions delivered in early childhood on subsequent youth violence outcomes.

In reviewing the literature on the effectiveness of interventions included in each strategy, the following hierarchy of evidence was considered: systematic reviews with a meta-analysis were regarded as the strongest form of evidence, closely followed by systematic reviews without a meta-analysis; where neither of these two types of study was available, findings from randomized controlled trials were reported, and, for interventions where randomized controls were lacking, findings from quasi-experimental studies and time-series analyses were reported. Concerning outcomes, studies that examined programme effects on risk factors for youth violence, and those that measured effectiveness using direct measures were included. Special efforts were made to identify studies from low- and middle-income countries, and those published in French and Spanish.

The 21 youth violence prevention strategies relate to four particular areas:

- Parenting and early childhood development;
- School-based academic and social skills development;
- Young people at higher risk of or already involved in violence, and
- Community and society level.

For each strategy we give a definition; a rationale for why it should prevent youth violence; findings on effectiveness (including where ineffective and/or harmful); comments on possible benefits, harms and acceptability; and suggestions about applicability in low- and middle-income countries. The reviews of each strategy commence with a box summarizing the main outcomes for which it has been evaluated; the effects it has had on those outcomes; and, where relevant, its probable effectiveness in preventing youth violence. This overview also indicates if the evidence is mainly from high- or middle- and low-income countries, and the strength of the underlying research designs. Strategies were classified as supported by strong research designs if these included at least two randomized controlled trials, or as being supported by weaker research designs if these included only non-randomized and pre-post-test designs.

Parenting and early childhood development approaches

Early childhood strategies address two interlinked sets of risk factors for youth violence that occur from birth until around 8 years of age. The first set includes risk factors in the individual child, including attention deficit, hyperactivity and conduct disorders, and other behavioural problems. The second set includes risk factors at the family level, such as poor parent-child relationships, child maltreatment, poor parental supervision, and harsh and inconsistent discipline by parents. Children with cognitive and behavioural problems can be more difficult to supervise, and where parents lack experience and have problems of their own, such disorders can exacerbate the risk of child maltreatment and the use of harsh or inconsistent discipline.

Home visiting programmes

Home visiting programmes involve trained nurses, health visitors and sometimes lay workers providing educational information and support to vulnerable and/or first-time parents in their homes, often before the birth of a child and during the first 2–4 years of the child's life. They aim to prevent child maltreatment and promote healthy development. Home visiting programmes address universal aspects of parenting (e.g. mother-child attachment) and are therefore likely to be of high relevance in all settings.

SUMMARY

- Only a few studies have evaluated long-term effects of home visiting programmes on youth delinquency
- Home visiting programmes clearly reduce child maltreatment (a risk factor for youth violence), and probably reduce adolescent delinquency and criminality
- There is insufficient evidence for home visiting programme prevention effects on violence in adolescence and adulthood
- There is high-income country evidence only
- Most reflect strong research designs

Relevance for youth violence prevention

The relationship between parents and their children can directly affect child development. Child maltreatment in infancy and early childhood is a risk factor for involvement in youth violence later in life, and for the development of behaviours (e.g. alcohol and drug abuse) that increase the likelihood of such violence *(55, 56)*. Home visiting has been shown to prevent child maltreatment and other risk factors for youth violence (e.g. alcohol and drug abuse), and is therefore assumed to prevent youth violence.

The evidence

There is strong evidence from high-income countries for the effectiveness of home visiting programmes in preventing child maltreatment and other negative child outcomes *(80, 81)*. Four studies that assessed long-term outcomes of home visiting programmes *(82)* found that children of single mothers in low-income settings who received home visiting programmes were significantly less likely as adolescents to report being involved in delinquency (including violence), and being arrested (-52.8%) or convicted (-63%) of a crime. Another study examined the long-term effects of a home visiting programme by nurses provided to young mothers, and assessed criminal involvement of the children of these mothers 19 years later *(83)*; the findings showed less lifetime arrests for girls but no reduction of lifetime arrests among boys.

In addition to preventing child maltreatment, home visiting programmes have been shown to improve the health status of children and mothers, and children's emotional and intellectual development *(84)*. For low- and middle-income countries, there is emerging evidence that home visiting programmes can

be implemented in resource-poor settings and can improve the quality of interaction between parents and children *(85)*. However, there is wide variability across home visiting programmes, and not all home visiting programmes are effective in reducing child maltreatment.

Implementing home visiting programmes

Home visiting programmes often target families where there is a high risk of maltreatment (e.g. families with very young mothers, or families living in highly deprived settings), and are implemented by trained nurses, health visitors or trained lay personnel as a separate programme or as part of a routine health service. Nurse visits to the family may begin prior to birth, with the nurse providing help and advice on child development, child care and parenting skills. Family visits typically take place at least once a month, and in some programmes may occur up to twice a week. The duration of home visiting programmes can range between 6 months and 3 years.

Feasibility and acceptability

Home visiting programmes have a range of immediate benefits that include reduced child maltreatment, improved child and maternal health, and enhanced early childhood development. These are in addition to long-term benefits such as reductions in youth delinquency, crime and violence, which accrue 10–15 years later. It is therefore important when advocating for home visiting programmes as a means of preventing youth violence to highlight both their immediate benefits and their youth violence prevention potential.

Costs

Costs for a home visiting programme usually include salaries for nurses, nurse training, administration costs, supervision and local transport costs. These will vary according to the type and intensity of the programme. For example, studies from the United States show that the annual costs of home visiting programmes range from about US$ 1000 to over US$ 5000 per family. A 2005 study by the RAND Corporation evaluated the cost-effectiveness of two evidence-based home visiting programmes for which cost-benefit data were available and found savings ranging from US$ 1.80 to US$ 5.70 per dollar invested *(86)*.

Nurse home visiting in the United States, the United Kingdom and the Netherlands

The Nurse-Family Partnership is a nurse home visiting programme for first-time mothers – mostly low-income and unmarried – during pregnancy and infancy. It was developed in the United States and is now implemented in several high-income countries including the Netherlands and the United Kingdom.

The programme provides nurse home visits to pregnant women with no previous live births, most of whom are low-income, unmarried and teenaged. The nurses visit the women approximately once a month during their pregnancy and the first 2 years of their children's lives. The nurses teach positive health-related behaviours, competent care of children, and maternal personal development (family planning, educational achievement, and participation in the workforce). For a programme beginning in the last trimester of pregnancy and ending 2 years after birth, the costs are approximately US$ 12 500 per woman.

The Nurse-Family Partnership has been evaluated in three randomized controlled trials, each carried out in a different population and setting. Examples of effects include reductions of 20–50% in child maltreatment and injuries; reductions of 10–20% in mothers' subsequent births during their late teens and early twenties; and improvements in cognitive and educational outcomes for the children of mothers with low intelligence, and/or poor mental health *(55)*.

Parenting programmes

Parenting programmes aim to increase parental skills and knowledge of child development, improve parent-child relationships and strengthen parents' ability to cope with children's behavioural demands in ways that are positive and socially beneficial. Their goals include reducing behavioural problems in children, such as aggression and oppositional behaviour *(87)*, and addressing core aspects of parent-child relationships, making them likely to be highly relevant in all settings. While most parenting programmes target parents with infants and toddlers, several address school-age children and adolescents.

SUMMARY

- Effects on child conduct problems and youth delinquency have been evaluated
- Parenting programmes reduce delinquency, behaviour problems and other risk factors for youth violence
- There is evidence from various settings including some low-resource settings
- Most reflect strong research designs

Relevance for youth violence prevention

Parenting programmes can help reduce child maltreatment and children's behavioural problems. Child maltreatment is a risk factor for involvement in youth violence later in life, and for the development of risk behaviours (e.g. alcohol and drug abuse) that increase the likelihood of such violence *(55, 56)*. Children who display behavioural problems and those with persisting aggressive and oppositional behaviours are at increased risk of becoming involved in youth violence during adolescence and early adulthood *(88)*.

While programmes for parenting younger children focus on educating parents about child development and supporting their children in achieving developmental tasks, parenting programmes for older children and adolescents focus on strengthening parents' ability to assist children in regulating their own behaviour.

The evidence

Evidence from high-income countries suggests that programmes targeting parents of infants and toddlers are promising in preventing child maltreatment *(55)*. Only a small number of parenting programmes have assessed the long-term effects of these programmes on adolescent delinquency, antisocial behaviours, and risk of arrest and imprisonment *(89)*.

Parenting programmes have also been shown to significantly reduce child conduct problems in older children, whether assessed by parents or independently *(90)*. One systematic review of 46 studies that examined the impact of parenting programmes on youth behaviour found that they reduced delinquency, conduct problems and other risk factors for youth violence such as substance abuse *(91)*. Another systematic review *(92)* has shown that parenting programmes for older children aged 8–17 years led to reductions in youth delinquency, conduct problems, arrests and time spent in institutions.

Some reviews have aimed to identify the effective elements of parenting programmes, and have found these to include modelling positive parent-child interactions and emotional communication skills; teaching parents to use 'time out' and parenting consistency, and requiring parents to practice new skills with their children during the parent training session *(93)*.

Emerging evidence suggests that parenting programmes can also be effective in developing countries. A review of 12 studies from nine such countries *(85)* reveals promising results for strategies involving a range of parenting measures. Findings from the two largest and highest quality trials included in this review suggest parenting interventions may be feasible and effective in improving parent-child interaction and parental knowledge in relation to child development in developing countries.

Implementing parenting programmes

Parenting programmes are usually delivered by social workers, mental health specialists or trained lay workers mostly as a group intervention, but sometimes also to individual families where more intensive support is required. Most parenting programmes are short-term interventions delivered once a week for up to 3 months. Many parenting programmes consist of different components, some of which are targeted at all parents and others that are focused on subgroups of parents with higher support needs.

Feasibility and acceptability

While there will be important direct outcomes on overall child development in the early stages of parenting programmes (such as better parent-child relationships and child development outcomes), there is a 5–10 year lag between when parenting programmes are delivered and when their benefits for youth violence prevention can be expected (in adolescence and young adulthood). It is therefore important to emphasize the short-term benefits of parenting programmes (e.g. on maternal health and children's emotional and intellectual development). Where existing parenting programmes are being implemented with aims other than youth violence prevention, youth violence prevention may be integrated as a longer-term objective.

Costs

Parenting programmes involve training costs, staff costs and managerial and administrative support costs. The largest costs are usually for training and supervision of staff. Recurring costs include training materials, information leaflets and additional items such as catering and child care during the parent-training interventions.

Annual costs vary by type of programme and delivery mechanism, and whether a programme targets high-risk parents only, or all parents in a community. Depending on the type of programme and on the intensity of its use, programme costs vary between US$ 200 and US$ 1200 per family per year in the United States *(94)*.

> **Parenting programmes in Burundi and South Africa**
>
> A brief parenting intervention to improve the behaviour and mental health of children aged 12 years was carried out in Burundi *(95)*. The intervention consisted of two psycho-education sessions of between 2.5–3 hours each for groups of 20 parents. The first session focused on raising awareness about child psychosocial and mental health problems, and the second on parental problem-management strategies – in particular how to avoid the use of harsh physical punishment. The groups were conducted by two lay community counsellors trained for a period of 3 months. Evaluation of the intervention showed it reduced behaviour problems, as measured by a self-rating scale, especially among boys. Parents evaluated the intervention positively.
>
> In South Africa, the Parenting for Lifelong Health (PLH) programme is a project that aims to develop, test and widely disseminate a suite of parenting programmes for low-resource settings that is affordable, not-for-profit, and based on rigorous evidence. This suite of programmes aims to prevent child maltreatment and subsequent involvement in other forms of violence such as youth and intimate partner violence. PLH components include group-based problem solving exercises; coaching in non-violent discipline and the use of "time out" as a disciplinary measure, and the practicing of parenting skills. The programme's core aims for parents include increasing positive and reducing harsh parenting practices; improving parental supervision of children; increasing the use of effective, non-punitive discipline; and decreasing stress and improving mental health. For children, PLH aims to reduce child behaviour problems and reduce the risk of child maltreatment *(96)*.
>
> The effectiveness of PLH is currently being evaluated through randomized controlled trials in several severely impoverished South African communities characterized by high levels of family and youth violence, alcohol and substance abuse, and HIV/AIDS. Initial results from early pilot studies aimed at establishing the programme's acceptability found high levels of parental engagement and low dropout rates, and promising signs that it was leading to parents adopting positive, non-punitive disciplinary practices *(96)*.

Early childhood development programmes

Multicomponent early childhood programmes target vulnerable families (e.g. those with teenage mothers or parents with low incomes), and are typically delivered in the community (e.g. at health centres, schools or neighbourhood centres). They usually include the provision of family support, pre-school education, child-care and health services, and target risk factors for youth violence in the early childhood period from birth until around 5 years of age. These risk factors include early disruptive and aggressive behaviour; impaired cognitive and social-emotional skills; lack of social support, and inadequate parenting *(97, 98)*.

SUMMARY

- Effects on youth violence and arrests for violent crime have been evaluated
- Early childhood development programmes clearly prevent youth violence and arrests for violent crime
- There is evidence for high-income countries only
- Most reflect strong research designs

Relevance for youth violence prevention

Disruptive and antisocial behaviour often starts early and can predict serious delinquent and violent behaviour during childhood, adolescence and early adulthood. Early childhood development programmes aim to address behavioural problems and aggression early, enhancing positive parent-child relationships, and attempting to increase potential protective behaviours such as academic achievement and child development. They also aim to address risks for later social and emotional behaviour problems by offering support to parents and a stimulating environment. In addition, high-quality child care often has other positive outcomes on cognitive and language development and academic achievement, which are protective factors for youth violence *(99)*.

The evidence

Evaluations of multicomponent early childhood interventions show reductions of 13% in subsequent youth violence and arrests for violent crimes *(100)*. Most evidence comes from a few well-researched programmes in the United States, such as the High Scope/Perry Pre-School programme; the Chicago Child Parent Center Programme; Head Start and Early Head Start, and the Abecedarian programme. Such programmes have also proven effective in strengthening factors that protect against youth violence, such as cognitive skills and academic achievement, with low to moderate effect. The effect of centre-based interventions seems to be larger when parent interventions are an integral part of the programme and/or if the programme is administered to at-risk children and families. Research also shows that programmes which combine group and individual work are more effective than programmes with only one of these elements *(82)*.

Multicomponent early childhood development programmes are implemented in several low- and middle-income countries, including Bangladesh, Brazil, Jamaica, Kenya and Mauritius, and several countries in central Asia. Outcome evaluations from low- and middle-income countries are, however, limited *(85, 97, 101)*.

Feasibility and acceptability

The importance of early childhood development is widely acknowledged in development policies and programmes *(105)* which increasingly focus on early childhood development and provide useful entry points for the introduction of violence prevention components. There are also other positive outcomes such as academic attainment and involvement in productive activities associated with early childhood

Strengthening early childhood development in central Asia

Families and Schools Together (FAST) is an after-school, multi-family group programme offered for 8 weeks to all children within the same grade, and their families. The intervention brings together family, home, school and community to increase child well-being by strengthening relationships and factors that protect against stress. Under the programme, the whole family comes to the school building after school hours to take part in family activities and share a family meal. Up to 80 families are divided into 10-family groups; each group is then assigned a classroom. The groups are led by trained teams of local parents, older children at the school, school staff and professionals specializing in mental health or treatment for substance abuse. The head teacher and other teachers encourage all families to participate in at least one group session. The programme provides families whose children are new to the school with the opportunity to meet the families of their children's classmates and to provide extra support to their children. The programme goals are to:

- strengthen the family and the parent-child bond;
- increase the child's success at school;
- reduce drug and alcohol abuse in the family;
- reduce family stress and social isolation *(102)*.

As part of its global initiative to enhance family skills as a means of reducing drug abuse among young people, the United Nations Office on Drugs and Crime has implemented FAST at nine primary schools in Kazakhstan, Kyrgyzstan and Tajikistan *(103, 104)*. The effects of the programme in these schools were evaluated using pre- and post-programme data collected from parents and teachers on child mental health, family functioning and parental involvement in school. Parents reported a 21% increase in family cohesion; a 52% decrease in family conflict; a 27% increase in the strength and quality of the parent-child bond; a 44% increase in child pro-social behaviour; and 7% decreases in both child conduct problems and hyperactivity. The programme was also found to have increased parental involvement in education and improved children's behaviour in school, as assessed by teachers *(104)*.

development programmes. Multicomponent early childhood development programmes seem to be widely accepted by participants of such programmes. When applied to high-risk subgroups, care must be taken to avoid stigmatizing selected beneficiaries.

Implementing early childhood development programmes

Programmes often consist of stimulating centre-based child care activities and parent trainings. Typical components include activities to enrich learning; life, social and cognitive skills training; and health care interventions. In high-income countries, these programmes are often implemented through existing structures such as child care facilities or community centres. Programmes are mostly implemented by educators or teachers with a qualification in early childhood development. The ratio of staff to children is usually very low and programme length varies, though is usually 3 to 5 months. Some programmes, however, accompany children over several years.

Costs

Economic analyses of several multicomponent early childhood interventions show that effective programmes can produce substantial savings. Cost-benefit ratios do, however, depend on the length of follow-up, and range from 6:1 to 12:1 *(98, 106, 107)*. However, these cost-benefit ratios occur in societies where considerable resources are invested in addressing the long-term consequences of suboptimal early child development (e.g. alcohol and substance abuse, violence, mental health problems). In societies where such services are lacking, the costs averted by such programmes will be lower, even where they help reduce such problems.

Pre-school intervention targeting teachers in Jamaica

Three quarters of all pre-school-age children in Jamaica attend community pre-schools that are mostly staffed by those without formal teacher training. The schools are often in poor physical condition, and teaching materials are supplied by parents. In an effort to prevent child mental health problems within this pre-school population, the Incredible Years Teacher Training Programme was adapted to the local context and focused on strengthening teachers' classroom management strategies, promoting children's pro-social behaviour, and reducing children's aggression in the classroom. Twenty-four community pre-schools in inner city areas of Kingston were randomly assigned to receive the Incredible Years Teacher Training intervention, or to be part of a control group. Three children from each class with the highest levels of teacher-reported conduct problems were selected for evaluation (225 children in total). Children in the intervention schools showed significantly fewer conduct problems, fewer teacher- and parent-reported behaviour difficulties, and increased school attendance *(108)*.

School-based academic and social skills development strategies

Life and social skills development

Life and social skills are defined as "the abilities for adaptive and positive behaviour that enable individuals to deal effectively with the demands and challenges of everyday life" *(109)*. WHO lists 10 core life skills. These are problem solving, critical thinking, effective communication, decision-making, creative thinking, interpersonal relationship skills, self-awareness building, empathy, and coping with stress and emotions. Life and social skills development programmes help young people increase their self-awareness and more accurately read and regulate their emotions. They also help young people establish and maintain positive relationships, and take the perspective of – and empathize with – others. Programmes to develop such skills aim to enable young people to deal constructively with daily life demands and with stressors and interpersonal conflicts.

SUMMARY

- Effects on aggressive and disruptive behaviour, violence and social skills have been evaluated
- Life and social skills development reduces aggressive behaviour and violence among primary and secondary school students
- There is some low- and middle-income country evidence
- Most reflect strong research designs

Relevance for youth violence prevention

Life and social skills are critical to success in school and work, which is protective against youth violence. Several risk factors for youth violence (e.g. alcohol and drug use, and dropping out of school) are related to a lack of social and emotional skills, and poor self-awareness. Life skills training programmes are designed to overcome such deficits and increase social and emotional competencies. Many life skills programmes are directly aimed at increasing the ability of children and youth to deal effectively and non-violently with interpersonal conflicts. Some life skills programmes target all children attending school, while others focus on children already showing aggressive behaviour.

The evidence

One meta-analysis of school-based programmes to reduce aggressive behaviour found sizeable effects on aggressive behaviour in programmes targeting all students, and in programmes that focused only on students at higher risk of violence *(110)*. It concluded that all programmes, whether focused on cognitive

skills, social skills or behaviour change produced similar effects. A systematic review of universal school-based programmes found a 15% reduction in violent behaviour in students across all school years, and a 29% reduction in violence among students in secondary school *(111)*. A narrative review *(112)* of 54 mainly Latin American studies published in Spanish reached similar conclusions. One systematic review to identify school-based secondary prevention programmes targeting young people who had previously shown aggression or were identified as being at risk of aggressive behaviour found that interventions addressing relationship and social skills reduced aggressive behaviour significantly *(113)*.

Implementing school-based life and social skills development programmes

Successful implementation of life and social skills development requires school systems that are running well and have effective school oversight and management mechanisms in place. Life and social skills training programmes are usually delivered over several years, and can involve 20–150 classroom-based sessions. Many programmes include age-specific modules, ranging from those for pre-school and kindergarten age children, through primary school and up to secondary school age. Key components of life skills programmes include cognition and skills training that help young people understand and manage anger and other emotions, show empathy for others and establish relationships. Programmes are either integrated into the school curriculum and the training carried out by teachers, or are administered by external staff such as social workers.

Feasibility and acceptability

Life and social skills programmes seem to be widely accepted by children and youth. Raising awareness about the importance of these programmes and their immediate and long-term benefits can be helpful in garnering the support of decision-makers. The wide range of secondary positive outcomes of life skills training programmes – such as better school performance, job preparedness, and reductions in the use of illicit drugs, alcohol, and tobacco – should also be highlighted when advocating for such programmes.

Costs and cost-effectiveness

Costs mainly relate to implementation – conducting teacher training workshops; providing technical assistance to teachers and coordinators throughout the project; and developing training and curriculum materials. Implementation costs for the administration of universal life and social skills trainings administered in schools in the United States range from US$ 35 per student per year for the Lifeskills Training programme, through to US$ 350-600 per classroom for the Promoting Alternative Thinking Strategies programme; and US$ 390-460 per classroom for the Positive Action programme. Cost-benefit analyses of these programmes suggest a cost-benefit ratio of 25:1, taking into account both violence prevention and other outcomes such as reduced drug use *(114)*.

Life skills development in Colombia

The Aulas en Paz programme is a school-based life skills development programme implemented in 27 schools in Colombia. It consists of three main components. The first is a teaching component in which life skills, empathy, anger control and active listening skills are learned and practiced by children. The second addresses parents and caregivers, who are invited to participate in four workshops annually, focusing on youth development and conflict management. In addition, parents of children and youths who have previously been involved in aggressive behaviour receive four home visits per year and a weekly phone call. The third component involves bringing students with aggressive behaviour together with students showing pro-social behaviour, and encouraging them to observe and model the pro-social behaviour of their non-aggressive peers. The programme is delivered in 40 sessions of 45 minutes each over 1 year. A pre- and post-test evaluation of the programme suggested that it led to fewer aggressive interactions, and increased pro-social behaviour *(115)*.

Bullying prevention

Bullying is any unwanted aggressive behaviour by another youth or group of youths who are not siblings or current dating partners, where there is an observed or perceived power imbalance, and where the behaviour is repeated or highly likely to be repeated multiple times. Bullying may inflict harm or distress on the targeted youth including physical, psychological, social, or educational harm *(116)*.

SUMMARY

- Effects on bullying perpetration and victimization have been evaluated
- Bullying prevention interventions reduce perpetration and victimization
- There is evidence from various high-income countries
- Most reflect strong research designs

Relevance for youth violence prevention

Bullying is a form of youth violence, and a risk factor for other forms of youth violence, including severe assault *(22)*. Bullying can involve physical violence, emotional violence, and damage to property *(117)*.

The evidence

A recent systematic review *(117)* concluded that half of the 22 programmes it covered led to significant reductions in bullying perpetration, and 67% to significantly reduced victimization. A further study found that on average, bullying prevention programmes prevented perpetration by 20–23% and victimization by 17–20% *(118)*. This study also attempted to identify the ingredients of successful anti-bullying programmes, which they listed as parent and teacher training, strict, school-wide rules against bullying, and the use of instructional videos.

Implementing bullying prevention programmes

Most bullying prevention programmes begin with a baseline assessment of levels and patterns of bullying to inform programme design and against which to monitor effects. Many programmes include training for all school staff and parents on how to deal effectively with bullying, and training for teachers on how to deliver the programme and on how to manage relationships and behaviours in the classroom. Teachers learn to instruct students about what bullying is; how to recognize it; what to do in cases of bullying; effective relationship skills, and skills for bystanders. Bullying prevention messages are often integrated into normal classroom lessons on standard subjects, although many programmes also engage more specialized staff (e.g. school social workers) to deal directly with students involved in bullying as victims and/or perpetrators. Most programmes also include the establishment of school policies and procedures around bullying (118-120).

Feasibility and acceptability

Bullying prevention programmes seem to be widely accepted by children and youth. While involving the parents of both victims and perpetrators appears to be an important factor in programme success, it carries with it the risks that victims might feel ashamed and stigmatized, and perpetrators may be subject to harsh punishment by their parents. Parental involvement, however, has been shown to be one of the key success factors for bullying prevention programmes. Bullying prevention programmes require strong commitment on the part of school administrators and teachers responsible for supervising students and implementing rules against bullying.

Costs

Implementation costs for anti-bullying programmes include the costs of training school administrators and teachers, and their work time, which accumulates to roughly 20–40 minutes per week. For example,

the Olweus Bullying Prevention Programme costs approximately US$ 25 per student per year, in a middle-sized school *(94)*.

> **Bullying prevention in Spain**
>
> The Proyecto Sevilla Antiviolencia Escolar is a bullying prevention programme implemented in 29 different locations in Spain. The programme involves designating a staff focal point for violence prevention, the revision of curriculum content, sessions to train all students in social and relationship skills and to develop empathy, and intensive interventions for students directly involved in bullying. Evaluation of the programme in a randomized controlled trial with over 4900 students found that it reduced the prevalence of bullying victimization from 25% to 15% *(121)*.

Academic enrichment programmes

Academic enrichment programmes are directed at children with low academic performance, and aim to improve their academic achievement and school motivation by supporting their studies and providing structured activities outside normal school hours, or target young people at risk of dropping out of school or who have already dropped out, and help them complete their secondary education.

SUMMARY

- Effects on school achievement and academic impact have been evaluated
- Academic enrichment programmes increase literacy, numeracy and educational achievement, and improve social adjustment
- There is some low- and middle income country evidence
- Most reflect strong research designs

Relevance for youth violence prevention

Low academic achievement and truancy are risk factors for violence. The number of years that some-body attended school is an important predictor of the likelihood that they will find employment, and both factors are protective against youth violence. Programmes that improve children's academic performance and school attendance may, therefore, have the potential to reduce involvement in violence *(88)*. Studies in Brazil, Chile, Honduras, Mexico and the United States have found that increasing students' sense of connection to school decreases absenteeism, fighting, bullying and vandalism *(122)*. However, while academic enrichment programmes may help to reduce some of the risk factors for youth violence, they are of limited value in contexts where overall levels of access to and quality of education are low, and where there are marked educational inequalities between groups (e.g. between boys and girls).

The evidence

While a number of studies have shown that academic enrichment can increase academic achievement and school attendance, few studies have examined the effect of academic enrichment on direct violence-related outcomes such as violent victimization, violent perpetration, bullying or injuries. Most studies have instead measured the impact on risk factors such as academic achievement and educational attainment. For example, there is some evidence that such programmes lead to literacy and numeracy gains and improved social adjustment, which in turn can protect against youth violence *(123)*. There appear to be no harms associated with academic enrichment programmes, and positive side-effects beyond potential reductions in violence include increased self-esteem, improved bonding to school, positive social behaviours, and academic achievement.

Implementation of academic enrichment programmes

Academic enrichment programmes implemented at pre-school age aim to address and reduce pre-existing inequalities in education between children. When targeted at older children and youth, such programmes are delivered as after-school lessons or private tutoring sessions to help young people keep up with school requirements and prevent them dropping out of school. Some programmes, such as Telesecundaria in Mexico, are delivered via television.

Feasibility and acceptability

Increasing academic skills is a strategy highly accepted by policy-makers. Relatively small percentages of dropouts, for example, 25% of children from Mexico's Telesecundaria programme and 7% of children from Indonesia's Open Junior Secondary Schools Programme, suggest they are also acceptable to children *(124, 125)*.

Costs

There are very limited data on the costs of academic enrichment programmes. A cost-benefit analysis of the LA's Better Educated Students for Tomorrow (LA's BEST) programme in the United States found in a cost-benefit analysis that for each US dollar invested in the programme the average saving was US$ 2.50 *(126)*.

Radio-based academic enrichment in Zanzibar

Zanzibar's Radio Instruction to Strengthen Education is an example of a successful academic enrichment project targeting underserved populations. The project is a partnership between Zanzibar's Ministry of Education and the Vocational Training and Education Development Centre to develop and pilot several models of early childhood education service delivery for children in the most underserved areas. It is administered via public radio and aims to teach language, mathematics and life skills. It has currently only been evaluated for its education gains, so it is important to raise awareness that such programmes could have preventive effects on youth violence and to evaluate whether this is in fact the case *(127)*.

Dating violence prevention programmes

Dating violence is physical, sexual and psychological/emotional violence within a dating relationship. Dating violence prevention programmes help youth to develop understanding and skills to maintain healthy, non-violent relationships, positive strategies for dealing with pressures, and the resolution of conflict without violence. Interventions are typically implemented in schools for those aged 12–16 years.

SUMMARY

- ■ Effects on self-reported physical, sexual and emotional dating violence perpetration and victimization have been evaluated
- ■ Effectiveness of dating violence prevention programmes is uncertain – multiple systematic reviews reach conflicting conclusions
- ■ There is evidence from very few high-income countries only
- ■ Mostly strong research designs

Relevance for youth violence prevention

Dating violence is an early form of intimate partner violence that occurs among teenagers and young adults. There is strong evidence that young people exposed to violence in early relationships are at higher risk of becoming victims and perpetrators of intimate partner violence later in life. As there are cultural differences in dating practices, programmes to prevent dating violence may be of high cultural specificity and relevant only to settings where adolescent and young adult dating is widely practiced.

The evidence

A meta-analysis of programmes to prevent dating violence *(128)* found mixed effects of dating violence prevention programmes on self-reported dating violence when results were pooled across studies. Another systematic review *(129)* found that half of the programmes it covered were effective in reducing self-reported perpetration of dating violence, while the other half showed no effect in reducing physical, sexual or emotional dating violence. In addition, many evaluations have examined programme effects on knowledge and attitudes only. Most evidence comes from high-income countries, in particular Canada and the United States, with one study from the Republic of Korea. Some outcome evaluations in low- and middle-income countries have been conducted or are underway (e.g., *(130)*.

Implementing dating violence prevention programmes

Most dating violence prevention programmes are implemented in a classroom setting with boys and girls, although sometimes boys and girls are taught separately. The programmes are often integrated into the standard teaching curriculum, and usually consist of 30–40 hours of training spread over the course of 1 school year. However, they can also be delivered as part of supervised after-school activities, such as sports and hobbies. There is usually a component to inform and involve the parents of adolescents participating in the programme, for example through leaflets or an information evening. Dating violence prevention programmes involve role play, hand-outs, games, discussions, posters and theatre productions; content areas include defining the characteristics of caring and abusive relationships; how to develop a support structure of friends who can help eachother; communication skills; and where and how to seek help in case of sexual assault.

Feasibility and acceptability

Although dating is a widespread practice in most cultures, it is not socially accepted everywhere and is particularly taboo in societies where young people marry early and extra-marital relationships are considered unacceptable. Parents of prospective programme participants might object to a programme addressing dating violence if they perceive it as encouraging youth to engage in early sexual relationships.

Dating violence prevention programmes are readily integrated into existing educational programmes such as school-based life skills programmes or sexual and reproductive health education, and are delivered in schools or health care settings or during leisure time activities for young people.

Costs

Resources are required for the adaptation and translation of programme curricula, for information brochures or sessions to inform and obtain consent from parents, and for the training of teachers or other staff to conduct the programme. In Canada, the cost of delivering the Fourth R programme was estimated at approximately US$ 16 per student *(131)*.

Dating violence prevention in South Africa and the Republic of Tanzania

The main purpose of the Promoting Sexual and Reproductive Health among Adolescents in Southern and Eastern Africa programme is to develop new and innovative school-based programmes for the promotion of healthy sexual practices among adolescents aged 12–14 years. Key goals of the project are the prevention of sexually transmitted infections and adolescent intimate partner violence. Based on a formative study among adolescents and on current research evidence, the project designed, adapted and implemented programmes for the promotion of healthy sexual behaviour among adolescents to be tested at schools in Cape Town and Dar es Salaam. The intervention programme was set up to allow evaluation of the intervention through a combination of quantitative and qualitative approaches. Further information is available at http://prepare.b.uib.no/ *(130)*.

Financial incentives for adolescents to attend school

This strategy comprises interventions including offering financial incentives to encourage increased school attendance through mechanisms such as conditional cash transfers, school vouchers, grants, school supplies and free public transport to school.

SUMMARY

- Effects on school attendance have been evaluated
- Financial incentives for adolescents to attend school possibly increase school attendance
- There is some evidence from low-resource settings
- Some reflect strong research designs

Relevance

School dropout, low levels of education and later unemployment are risk factors for youth violence, while school attendance and higher levels of education are protective factors. School connectedness and bonding to school is often negatively linked to violence *(132)*. It is assumed that providing incentives to remain in school can help to convince young people to do so.

The evidence

There appear to be no studies that evaluate whether conditional cash transfers or other incentive programmes to ensure young people remain in school have an impact on levels of youth violence *(133, 134)*. However, the effects of financial incentives and education grants on school enrolment (a protective factor for youth violence) *(135, 136)*, have been evaluated. The Mexican programme Oportunidades provides grants to families on condition that adolescents attend school, and led to an 8% increase in enrolment rates in secondary school *(137)*. Results from the Brazilian programme Bolsa Escola have shown a reduction in school dropout rates *(138)*.

Implementing cash transfer programmes and financial incentives for adolescents to attend school

Large-scale cash transfer programmes with a primary or secondary aim to encourage young people to remain in secondary schools are implemented in several Latin American countries, as well as in Turkey and in the United States, among other countries. In these programmes, cash is usually granted on a per-student or per-family basis and is tied to school attendance for at least 80% of the school day. The cash grants generally cover direct costs such as school fees and supplies, and the opportunity costs for families when they lose income as a result of sending their children to school. For example, the Bolsa Escola programme was established in Brazil with the goal of keeping children in school and preventing them from working. Families were paid R$15 for every 2 months that they ensured their child was in school *(139)*.

Feasibility and acceptability

Acceptance of conditional cash transfers and financial incentives appears to be high in many settings. Conditional cash transfer programmes often enable poorer populations to engage in healthier behaviour or access to essential social services. Some conditional cash transfer programmes and financial incentives may encourage high-risk behaviour to increase eligibility for the conditional cash transfer. It has also been argued that conditional cash transfers can create a dependency culture, that private income might be shifted to less healthy options, and that they may open opportunities for corruption *(140)*.

Costs

Costs are variable, depending on the context. In general, the incentive value of the conditional cash transfer should be less than a young person's potential earnings, but should increase with age to take into account the increased opportunity costs to families of sending older children to school, and the greater availability of lucrative but risky alternatives to attending school, such as involvement in drug trading. The Bolsa Familia programme in Brazil, which includes a range of measures in addition to financial incentives to education, cost about 0.5 % of GDP *(141)*.

Incentives for youth to complete schooling in Mexico

Oportunidades is Mexico's principal poverty alleviation programme. The programme provides financial grants to families to improve their situation in terms of health, nutrition and education, including educational grants for children under the age of 22 years to complete school. Evaluations of the programme have shown that it has had a positive impact on school enrolment of youths, total years of schooling, dropout rates and the probability of finding employment. It was also found to reduce alcohol consumption, smoking and high-risk sexual behaviour, and had mixed results in respect of intimate partner violence. The evaluation did not include any outcome measures of youth violence. The programme, which began in 1997 in poor rural areas, has subsequently been scaled-up to cover urban areas, and now reaches an estimated four million families *(137)*.

Peer mediation

Peer mediation refers to the formal engagement of peers in tackling conflicts and violence among young people. Trained students help their peers to cooperate in resolving everyday disputes. Participation in peer mediation is usually voluntary. The peer mediation process is confidential, and adults and teachers are usually not involved, with the exception of the exchange of information concerning issues that might be life-threatening or illegal *(142)*.

SUMMARY

- Effects of peer mediation on conflict mediation and negotiation skills, and on bullying and fighting have been evaluated
- The effectiveness of peer mediation is uncertain – multiple systematic reviews reach conflicting conclusions, and some suggest harmful effects
- There is high-income country evidence only
- Most reflect weak research designs

Relevance

Conflicts among students occur frequently in school settings, although most of them do not lead to serious injuries. Peer mediation approaches try to teach students constructive, pro-social ways of resolving interpersonal conflicts, and assume that during childhood and adolescence attitudes and

behaviour are strongly shaped by the peer group. Peer mediation approaches are a widely implemented strategy for youth violence prevention.

The evidence

Peer mediation programmes may be effective in teaching selected students mediation and negotiation strategies, and one systematic review found that peer mediation programmes reduced school disciplinary actions related to violence *(143)*. However, other systematic reviews of school-based programmes to reduce bullying and victimization concluded that peer mediation components are not effective and may even be associated with increased victimization *(142, 144)*. While some programmes reported positive effects for peer mediators, others noted that the programmes can put mediators at increased risk for retaliatory violence. Overall, the findings are inconclusive. Peer mediation approaches are mostly applied and evaluated in settings with moderate incidents of aggression and violence, and conclusions cannot be drawn as to their value in settings with more severe violence or in settings where additional risk factors such as drugs and alcohol are involved.

Implementation of peer mediation programmes

Peer mediation programmes are typically implemented in schools. Peer mediators are usually nominated by the class and often a gender-balanced mediation team is chosen. The selected peer mediators receive 20–25 hours of training on how to recognize and mitigate conflicts, their roles and responsibilities, and how to seek help if they are unable to deal with a conflict on their own. In many programmes, training in conflict resolution skills for all students is integrated into the general school curriculum. Peer mediation programmes are implemented in various low- and middle-income countries.

Feasibility and acceptability

Peer mediation approaches are primarily suitable for day-to-day conflicts, and cannot replace more intensive interventions in instances of serious problem behaviours. In settings characterized by high levels of violence, peer mediation approaches may even put mediators at risk. Due to the low cost of implementation and modest staffing requirements, these programmes are appealing to policy-makers from the educational sector and school officials. Implementation of a peer mediation programme requires acceptance by teachers implementing the programme, school administrators, parents of participating students, and the students themselves. However, parents, teachers and students might question whether the responsibility to maintain a functioning and peaceful school setting should be delegated to the students themselves.

Costs

Initial and ongoing costs of peer mediation programmes include a coordinator and/or trainer to train peer mediators, training, substitutes for teachers participating in training, and other expenses such as training materials. Funding is often obtained from school system budgets (e.g. funds for teacher development). Costs of the Peers Making Peace programme in the United States ranged from US$ 2575 to US$ 4075 per school in the first year. Ongoing booster training sessions cost on average US$ 1500 per school for each additional year *(145)*.

Peer mediation in the United States

Peers Making Peace is a school-based peer mediation programme for students from elementary through secondary school. Adult programme facilitators such as teachers, counsellors or school nurses attend a 3-day training course where they learn to train a student mediation team of 15–24 students who have been selected as peer mediators. Student mediators then receive training from the facilitator three times during the school year, and each training session lasts 3–5 hours. During the training, students learn how to serve as role models, and provide mediation for peers who may lack the skills to successfully resolve their own conflicts without the use of violence. Two randomized controlled trials of the programme found that the number of discipline referrals, the number of physical fights, and the number of absences decreased in school districts where the programme was applied. Perceptions of safety, self-efficacy and self-esteem increased in the intervention groups *(145)*.

After-school and other structured leisure time activities

After-school and other structured, extracurricular leisure time activities provide opportunities for youths to interact with their peers and learn skills. Participation in these activities – which usually take place in the afternoon following school, or at summer camps during school vacation – are voluntary. There are big variations between these programmes in the type of activities promoted, the duration, the target groups, and the qualification of supervisors.

SUMMARY

- Effects on school dropout rates, adolescent delinquency, and juvenile crime have been evaluated
- Some strategies that included social skills training have reduced delinquency and risk factors such as alcohol and drug consumption and school dropout
- There is some low- and middle-income country evidence
- Most reflect weak research designs

Relevance

Structured leisure time and after-school activities are assumed to reduce risk factors for youth violence in three ways. First, they provide children with supervision during critical times of the day. Research has shown that some forms of youth violence peak in the afternoon, when young people are often not supervised. Second, school-based activities in particular are assumed to increase attachment to school. Bonding and attachment to school is another protective factor for youth violence. Third, these programmes can provide young people with skills needed to avoid violent behaviours. Often, structured leisure time activities include training components on life and social skills.

The evidence

A meta-analysis of after-school programmes in the United States found that participants demonstrated significant increases in protective factors such as bonding to school, positive social behaviours and levels of academic achievement, and significant reductions in problem behaviours. Programmes that included components of academic and social skill development demonstrated greater preventive effects than those without these components *(146)*.

Some studies not included in the meta-analysis cited above specifically measured levels of violence as an outcome of structured leisure time activities. One longitudinal study found a reduction in adolescent delinquency and violent behaviour in a 4-year follow-up *(147)*, and several evaluations of the LA's BEST programme show that students who participated in the programme are 30% less likely to commit juvenile crime *(126)*. However, some evaluations found structured leisure time and after-school

activities had negative effects. After-school programmes are frequently targeted at youths from poor socio-economic backgrounds or youths with behavioural problems, and several studies have noted that bringing together high-risk youths may have adverse effects *(144)*.

Implementing after-school and structured leisure time activities

Structured leisure time activities are implemented in a group setting or as one-to-one tutoring – the latter with a focus on academic skills development. Activities include cognitive and academic skills development, such as homework time, tutoring and computer activities; recreational activities such as arts and crafts, cooking, and sports; performing and visual arts, such as music, dance and theatre; health and nutrition; and community and parental involvement activities. These programmes are typically delivered in schools, community centres or sports facilities. Supervision is provided by teachers, parents, volunteers or social workers at schools.

Feasibility and acceptability

After-school and structured leisure-time activities tend to be widely accepted among policy-makers and participants alike, as they are easy to organize and usually associated with positive experiences. Barriers to participation include programme costs, specifically fees and transportation costs or costs for equipment. Some programmes fail to reach out to communities at particular risk of violence, and a lack of awareness of these programmes may reduce levels of participation on the part of youths at high risk of violence. A study on lessons learnt when implementing after-school activities and structured leisure time activities found that it is important that youths participating in such programmes are not labelled "at risk" and thereby stigmatized *(148)*.

Efforts should be made to remove barriers to participation in structured leisure time and after-school activities, especially for youths from poorer socio-economic backgrounds and at risk of violence. These include free transport to the venue, participation in the activity at no cost, and possibly the provision of a snack or meal.

Costs and cost-effectiveness

Costs depend on the type of activity, the duration of the programme and the type and qualification of the staff administering the programme, but expenses usually involve materials for the activity, curriculum development, training of supervisors and supervisor time. There are few cost-effectiveness studies. Analysis of the LA's BEST programme estimated returns of US$ 2.50 for each dollar spent on the programme. The average monthly student cost of UNESCO's Abrindo Espaços (Open Schools) Programme in Brazil was US$ 12 to US$ 24 per student per year *(149)*.

After-school activities for youth in Brazil

The Abrindo Espaços (Open Schools) Programme was launched by UNESCO and the Brazilian Ministry of Education in 2004 as a public policy entitled Open School: Education, Culture, Sport, and Work for Youth Programme. The programme offers sports, cultural, arts and leisure activities, and initial vocational training for youth on weekends. The average monthly cost of the programme is US$ 1 to US$ 2 per student. Evaluations have shown that levels of violence registered in schools and their surroundings were lower for schools taking part in the programme. In São Paulo, the Open Schools Programme was implemented in 5306 schools between 2003 and 2006, and criminal acts were reduced by 46%. Research on the Open Schools Programme in Rio de Janeiro found that after 12 months, schools participating in the programme had levels of violence 31% lower than schools that had yet to join the programme, although it is unclear whether levels of violence in the two sets of schools were comparable prior to the intervention *(150)*.

Strategies for young people at higher risk of, or already involved in, violence

Therapeutic approaches

Therapeutic approaches covered in this review include cognitive, behavioural, psychosocial or social interventions delivered to individuals who have been involved in aggressive or violent behaviour, or who are at risk of committing such behaviours. Such approaches are delivered on an individual or group basis and may involve the social environment of the young person, including their family. They are delivered by trained therapists or social workers, and sometimes by trained lay workers.

SUMMARY

- Effects on antisocial behaviour, violence, and criminal re-offending have been evaluated
- Some therapeutic approaches (e.g. cognitive behavioural therapy) clearly reduce antisocial behaviour, violence, and criminal re-offending
- There is high-income country evidence only
- Most reflect strong research designs

Relevance for youth violence prevention

Some therapeutic approaches address multiple causes of violent behaviour across various systems in which a young person is embedded (e.g. family and peer relations, the school situation, and the community), and aim to address risk factors for the perpetration of violent or aggressive behaviour in these settings. Other therapeutic approaches focus on helping individuals deal with problems in a more constructive manner by better recognizing and modifying thinking patterns that led to negative actions in the past.

The evidence

One systematic review *(151)* focused on how therapeutic approaches – including psychological approaches and social and educational methods aimed at supporting pro-social behaviours – can reduce recidivism among young people who have been incarcerated for serious crime, including violent crime. The review included 30 studies with over 6600 arrested juvenile offenders in Canada, the United Kingdom and the United States. In this review, overall treatment reduced relapse into juvenile crime from 60% of those who had been arrested to 56%. Programmes that included cognitive therapy worked best. Programmes that focused only on education, academic skills or at behaviour change through positive role models were not as successful. A systematic review that focused only on cognitive behavioural therapy (CBT) *(152)* found that this intervention reduced reoffending by 25% one year after the intervention.

A meta-analysis of CBT for children showing aggressive behaviour suggests that children who complete CBT show clinically significant reductions in aggressive and antisocial behaviours and conduct disorders *(153)*. Other therapeutic approaches use cognitive behavioural methods and include the social environment of the young person with behavioural problems. Examples include Functional Family Therapy (FFT) and Multi-Systemic-Therapy (MST). A meta-analysis of FFT found small to medium effects on the recidivism among juvenile offenders of crime *(154)*. A narrative review of MST *(94)* found that it reduced arrests and convictions, including for violent crime, by half. Several longitudinal studies have shown that positive effects were observed up to 21 years after the intervention.

Implementing therapeutic approaches for high-risk youths

Therapeutic programmes last on average 10–20 weeks. They can be delivered on their own or as a component of larger programmes, and most use standardized materials and therapeutic manuals. They

are usually delivered by mental health specialists or social workers with a therapeutic qualification. Most programmes also involve supervisors with further extensive training, who support the programme delivery staff.

The content of therapeutic approaches is usually adapted to the specific needs of the young person, although they generally combine social skills and behavioural training, anger- and self-control techniques, and cognitive elements such as moral reasoning and perspective-taking to better appreciate the negative impacts of violence on victims. Other interventions focus more strongly on targeting the entire family and social network of the young person at risk of violence.

Feasibility and acceptability

Policy-makers are often requested to respond to the needs of youth at high risk of violence and assist them in moving toward a more positive developmental path. Low dropout rates of therapeutic approaches in various national settings suggest that their acceptance is high *(155)*. However, in countries with few mental health services and mental health professionals, such interventions are probably not feasible.

Costs

The lack of availability of low-cost therapeutic interventions is a major barrier to their uptake. Therapeutic approaches require highly trained and dedicated staff able to counsel youths and families on a regular basis. For instance, the costs of providing the Reasoning and Rehabilitation programme in the United Kingdom was estimated at £ 121 per adolescent with offending behaviour and £ 637 per adult offender *(154)*.

An international reasoning and rehabilitation programme

The multicomponent, 20-country Reasoning and Rehabilitation programme targets youths at risk of violence and offenders with the aim of developing cognitive skills that will help them to make better behavioural choices. It consists of 36 2-hour sessions delivered twice to four times a week over the full course of the programme to groups of six to 12 participants. Activities include role-playing, thinking games, and learning exercises designed to enhance social skills, negotiation skills, management of emotions, creative thinking, values and critical reasoning *(156)*. The programme was developed in Canada and has been replicated in about 20 countries, and evaluated in Finland, Germany, Iceland, Iran, Spain and the United Kingdom. A meta-analysis found that there was a 14% decrease in recidivism for programme participants. Not all studies included violence as an outcome, although a Canadian study which did include violence found that programme participants were 49% less likely to be readmitted following a new, violent offence *(157)*.

Vocational training

Vocational training is frequently offered to disadvantaged youths to help them acquire technical, trade or supervisory knowledge and skills, and some programmes include advice on self-employment and micro-enterprise development.

SUMMARY

- Effects on youth unemployment and violent and aggressive behaviours have been evaluated
- Vocational training can increase youth employment – a protective factor – if training is well matched to current employment opportunities, but has not been clearly shown to reduce violent behaviour
- There is some low- and middle-income country evidence
- Most reflect strong research designs

Relevance for youth violence prevention

Young people who have difficulties in finding and keeping jobs are more prone to crime, violence and substance abuse. Youth employment is considered protective against youth violence. Vocational training programmes are implemented in many countries, mostly with the primary objective of reducing youth unemployment and poverty.

The evidence

Few studies have measured the impact of vocational training programmes on youth violence outcomes, and of the few programmes that have been evaluated, most have focused on youths at high risk of violence or already in contact with the criminal justice system. Higher-quality randomized studies found that vocational training does not reduce violent behaviour *(158, 159)*, while lower-quality observational studies found small to medium effects *(160)*. One systematic review found that targeted support services, including employment and job skills advice for young people in custodial care owing to their risk of violence, found mixed results on criminal arrests *(161)*. More research is therefore needed to establish whether vocational training programmes can reduce youth violence.

Implementing vocational training programmes

Vocational training must be demand driven and there must be a match between vocational skills and market requirements. Vocational training will only have a meaningful impact on youth employment and violence prevention if delivered in the context of an integrated strategy for economic development and job creation. Accordingly, it is important to assess the capacity of training institutions, available technical equipment, existing cooperation with businesses and the existence of sustainable financing models when considering whether to implement vocational training programmes for youths at risk of violence.

   Vocational training programmes are implemented in many countries, and examples from low- and middle-income countries include Samoa's Opportunity for Vulnerable Poor Youths programme, and the Philippines' Working Youth Center *(162)*.

Feasibility and acceptability

Vocational training programmes enjoy high levels of acceptance, although dropout rates are often high, in particular among youth at higher risk of violence. If vocational training does not match the demand of the labour market, and is implemented without real opportunities for subsequent employment, it may lead to disillusionment and distrust of authority.

Costs

Costs of vocational training programmes are variable. During training, trainees must accept lower wages and bear opportunity costs such as foregone earnings as unskilled workers, and employers must pay wages and labour costs, and allocate experienced supervisors' time to the programme. In-house training courses require materials, special clothing, teacher salaries and administration costs. On the part of government, subsidies to training firms may need to be paid, or financial concessions to employers may be made to finance vocational training programmes. Chile has implemented various programmes to strengthen the vocational capacities of young people, and Chile Joven, a vocational training programme implemented over 11 years, has reached 165 000 participants at a cost of US$ 107 million (US$ 648 per person reached) *(163)*.

Youth vocational training in Argentina, Chile and the Dominican Republic

Jóvenes is a programme that offers disadvantaged young people an opportunity to gain work experience, help in searching for jobs, counselling and life skills training. It was first implemented in Chile, and later expanded to Argentina and the Dominican Republic. Evaluations of these programmes have shown that participants had a greater chance of finding jobs and subsequently earned more compared to control groups. The employment rate increased from 10% to 26%, depending on the country and the age and gender of participants. In general, younger participants and females had higher chances of finding employment *(162)*. The effects of these programmes on youth violence were not evaluated.

Mentoring

Mentoring refers to a partnership through which a more experienced person shares knowledge, skills, information and perspective to help a young person's positive development *(164)*. While some mentoring programmes focus on a specific outcome, such as academic achievement or violence prevention, others aim at strengthening protective factors and reducing risk factors more broadly to facilitate overall healthy youth development.

SUMMARY

■ Effects on aggressive behaviour and delinquency have been evaluated

■ The effectiveness of mentoring is uncertain – multiple systematic reviews reach conflicting conclusions, and some suggest harmful effects

■ The evidence is from very few high-income countries only

■ There are few strong research designs

Relevance for youth violence prevention

Mentoring programmes target children and youth at risk of violence, dropping out of school, or developing other behavioural problems, and who lack guidance and support from positive role models in their surroundings. They assume that social learning processes occur in the relationship between a mentor and mentee, and that the mentor can provide support in handling day-to-day problems, and guidance on alternative ways of dealing with conflicts.

Effectiveness

No studies have assessed the effectiveness of mentoring programmes on severe youth violence. Meta-analytic and systematic reviews from the United States report modest positive effects on aggression and delinquency. There is however much variability across programmes, with some studies showing negative effects. Mentoring programmes depend largely on the mentor-mentee relationship, are not standardized, and interventions are often poorly described. Caution is therefore necessary when interpreting the results of the reviews *(164)*. Some mentoring programmes have been shown to have effects on secondary risk factors for youth violence. For example, an evaluation of the Big Brothers, Big Sisters programme in the United States found that it reduced illicit drug initiation by 46% and alcohol initiation by 27%, and increased protective factors such as school attendance, improved relationships with parents, and commitment to engage in school tasks *(165)*.

Implementing mentoring programmes

Implementation of mentoring programmes starts by identifying the target group. Mentoring pro-grammes are usually targeted at youth engaged in, or thought to be at risk of, delinquent behaviour,

school failure, violence or other antisocial behaviour. Once the participants have been identified, volunteer mentors are recruited. Success or failure of a mentoring programme strongly depends on the recruitment process and the quality of mentors. For the Big Brothers, Big Sisters programme, prospective mentors must submit references and undergo a background check and a recruitment interview *(166)*. Mentors and mentees are usually of the same sex. In most programmes, mentors receive training, which typically includes information on the child and youth development, relationship building, problem solving and how to communicate with young people, but may also cover more specific topics such as how to manage alcohol and drug abuse.

Feasibility and acceptability

Mentoring programmes are usually voluntary and well accepted. However, programmes often rely on volunteer mentors, and therefore may be difficult to implement in low- and middle-income countries where paid employment is preferred. Programme acceptance on the part of policy-makers depends on the costs of the programme.

Costs

As the interventions included in specific programmes differ widely, generic costs for mentoring pro-grammes are difficult to calculate. Some programmes work with volunteers and have administrative and communication costs only, while others employ agencies that are in charge of the entire programme administration. The Big Brothers Big Sisters programme in the United States costs on average US$ 1312 per person mentored *(167)*. The main costs arise during the recruitment and training of mentors, and in the process of matching mentors and mentees.

Big Brothers, Big Sisters mentoring programme

The Big Brothers, Big Sisters mentoring programme is currently implemented in 12 countries, among them Bermuda, Bulgaria, Israel and the Russian Federation, and several countries in western Europe and North America. The programme matches a volunteer adult mentor to a child, with the expectation that a caring and supportive relationship will develop. Once matches are made, they are monitored and supervised by a professional. Relationships between mentor and child are one-to-one, and involve meeting for 3 to 5 hours per week, over the course of a year or longer. Goals are set jointly with the child and parents at the beginning of the mentoring relationship and may relate to problem behaviours, school attendance, academic performance, relationships with other children or learning new skills. The case manager maintains regular contact with the mentor and the mentee to determine how the relationship is developing. The programme has been shown to reduce alcohol and drug use, physical violence, and absenteeism from school, and to improve the quality of relationships between children and their parents *(94)*.

Gang and street violence prevention programmes

Gang violence is the intentional use of violence by a person or group of persons who are members of, or identify with, any long-lasting, street-orientated youth/armed group whose identity includes involve-ment in illegal activity. Gang violence prevention programmes try to prevent young people joining gangs in the first place, assist young people who are already in gangs to disengage, and/or suppress gang activities *(168–170)*. Street violence prevention programmes focus on reducing street violence (shootings and killings), while not specifically attempting to address gang membership or suppress gang activity.

SUMMARY

- Effects have been evaluated in relation to youth crime by gang members; stopping youth from joining gangs; helping youth disengage from gangs; and on suppressing gang activity
- Insufficient evidence for effectiveness in stopping youth from joining gangs, on helping youth disengage from gangs and on suppressing gang activity
- Some evidence for gang enrolment prevention
- There is high-income country evidence only
- Most reflect weak research designs

Relevance for youth violence prevention

Risk factor research indicates that youth who join gangs are more likely to be involved in delinquency and serious violent offences than non-gang youth and non-gang delinquent youth *(168)*. Gang violence has high political salience and occurs in all parts of the world to varying degrees.

Effectiveness

The content of gang and street violence prevention programmes varies widely, making evaluation difficult. While a few individual studies show positive outcomes for gang violence prevention, the evidence is far weaker when results are pooled across studies. A systematic review and meta-analysis of gang violence prevention efforts covering nine studies found that comprehensive interventions had a positive, but statistically insignificant effect in reducing crime outcomes *(170)*. This review also suggested that comprehensive interventions, including personalized case management, community involvement in the planning and delivery of interventions, and the provision of incentives to gang members to change offending behaviour, may be more effective than programmes which do not combine these elements.

A second review *(171)* focused on strategies to prevent young people from entering gangs, help them leave gangs, and suppress violent gang activity. It concluded that programmes that applied comprehensive strategies and targeted children at an earlier age were more promising than those that consisted of a single prevention strategy, or which addressed just one risk factor.

A third systematic review *(172)* focused on cognitive-behavioural interventions for preventing youth gang involvement in children and young people aged 7–16 years and found no research matching the inclusion criteria. This review therefore recommended that evaluations of cognitive behavioural interventions for gang prevention be undertaken to fill this evidence gap.

Implementing gang and street violence prevention programmes

The implementation of gang and street violence prevention programmes largely depends on the nature of the gang activities and to what extent gang structures have been established. According to the context, a decision has to be made whether to focus on primary prevention of gang enrolment, on helping members to leave gangs, on suppressing gang activities, or a combination of all three. Most gang violence prevention programmes include mechanisms to ensure strong community engagement, in particular of community leaders, in order to convey a clear and consistent message that gang violence is unacceptable. Implementation may or may not involve collaboration with the police. Often gang violence prevention programmes add components of vocational training or personal development that help gang members find alternatives to violent offending.

Feasibility and acceptability

Measures addressing gang violence appear to be widely accepted by policy-makers and the public. There is however very little information available on whether such programmes are acceptable to gang members themselves, or to young people at risk of joining a gang. One study *(173)* surveyed 3348

youth in alternative schools and juvenile correctional facilities and boot camps, of whom 1994 admitted belonging to a gang, while another *(174)* sampled over 1000 at-risk gang youth. Both surveys were carried out in the United States, and 50% of participants said that job training and employment were the answer to the gang problem. In another study of some 200 gang-involved youth in Colorado, Florida and Ohio in the United States, many gang members said they would not give up selling drugs for a job that brought them less than US$ 15 an hour, while 25% said they would do so for US$ 6–7 an hour provided they were contracted to work for regular hours on an ongoing basis *(175)*.

A prominent approach to tackling gang-related violence in Central America is known as "mano dura" ("firm hand"). This approach has led to a substantial increase in arrests, to which gangs have responded with increased cohesion to unite against repressive government actions, often leading to more violence *(176)*.

Costs

There is little information on the costs of gang violence prevention programmes. No studies included in the reviews described above considered the cost-benefit ratio of any interventions.

Helping youth disengage from gangs in Nicaragua

The HABITAT project in Managua, Nicaragua, aimed to provide positive development opportunities for gang members, including educational opportunities and resources and training for skilled employment. Gang members were recruited through local leaders of gang-affected communities and given training, predominantly as carpenters and masons, in exchange for formally and publicly renouncing their gang lifestyle. At the end of the training they were given a small loan to facilitate the setting up of a minor business. If an individual returned to the gang, the loan was cancelled and the person was forced to repay the money. There was substantial dropout during the training and education phase, and most recruits were unable to establish a stable business after training.

An evaluation of the project identified two reasons for its failure. The power of the "collective" element of gangs and the communities they exist within was overlooked by the project – many former gang members felt they were selfishly betraying their gangs and communities by building up their own businesses. In Nicaragua, it may therefore have been more beneficial for the project to benefit the community as a whole, or to create a collective occupation through which the gang may "mature out" together. Also, in the context of a country with an unemployment rate of 60% in the mid-1990s, it was very difficult for a one-time small loan to stimulate and sustain a small business *(177)*.

Community- and society-level programmes and policies

Hotspots policing

Hotspots policing is a law enforcement strategy focusing on deploying police resources in geographical areas where crime has been shown to be particularly prevalent. It is often combined with community- and problem-orientated policing strategies. However, hotspots policing strategies, as opposed to community-based policing strategies, tend to use more traditional tactics, such as increased patrols in hot spots, while community policing (see next section) tries to engage more pro-actively with the people of a community.

SUMMARY

■ Hotspots policing is often implemented and evaluated jointly with community- and problem-orientated policing strategies
....
■ Systematic reviews of hotspots policing show small positive effects on reducing violent crime; one study of the Cardiff model showed substantial reductions in violence-related injuries
....
■ There is high-income country evidence only
....
■ There are some strong research designs
....

Relevance

Studies suggest that a majority of criminal activities and many instances of youth violence occur in specific places (e.g. in particular streets, clubs and bars). Crime and violence can therefore be reduced if prevention efforts are systematically focused on these places – the so-called "hot spots". The concentration of crime in a few hotspots seems to be more relevant than the concentration in individuals *(178)*. Place-based policing interventions aim to reduce crime and disorder efficiently by focusing on areas that experience most violence.

The evidence

One systematic review based on 10 randomized controlled trials *(179)* of the effects of hotspots policing on property crime, violent crime and disorder found significant but small crime reduction effects *(180)*. The review controlled for the possible effects of displacement of crime to other nearby places. The review also evaluated hotspots policing strategies in combination with problem-oriented policing strategies and concluded that combining both approaches yields the largest reductions in overall crime. Caution needs to be applied when interpreting these findings, as a very small number of eligible studies looked at a broad and diverse group of problems and possible interventions.

Subsequent to this review, an outcome evaluation of the "Cardiff model", whereby data from hospital emergency departments and the police is combined to better identify hot spots for violence, showed it to have substantially reduced rates of violence-related injury treated in hospitals, and violence-related woundings reported to the police *(8)*.

Implementing hotspots policing programmes

Implementing hotspots policing requires additional data on the "who, what, when, where and how" of crime and violence. Such data might include information from hospital emergency rooms on violence-related injuries, or on vandalism and shoplifting, in order to complement police crime statistics that severely under-report instances of violence. Using such information, the identification of hot spots requires staff trained in mapping technology and the analysis of geographic databases.

Feasibility and acceptability

Hotspots policing may not be appropriate in all settings. Essential preconditions for hotspots policing strategies include the existence of a legitimate, accountable, non-repressive and non-corrupt policing system, and accurate, timely statistics on the time, place and nature of events. Policy-makers may be attracted to law and order approaches to address crime and violence in response to citizen calls for hard measures and deterrents. Policing interventions carried out in a context of repression, lack of accountability and corruption can increase social tensions and youth violence. Hotspots policing applied in isolation from community-centred approaches may increase community tensions.

Police forces might be reluctant to implement new policing approaches. There may also be resistance on the part of residents in low-crime areas over concerns that policing may be diverted from these areas.

Costs

Hotspots policing requires software to geocode and plot data on violent incidents. It requires human and management resources to analyse data, decide, plan and implement intervention strategies, and to evaluate the interventions.

The Cardiff model

The Cardiff model for the prevention of violence (8, 181) involves collecting anonymized data on the "who, what, when, where and how" of violence-related injuries treated in hospital emergency departments, and combining these with data on violence-related incidents recorded by police. The combination of health and police data allows for the more accurate prediction of future patterns of violence and the identification of violence hot spots, and is used to design and direct policing and other interventions, which so far have included:

- targeted policing, whereby the deployment of police units is aligned with the time and location of violence in certain hot spots;
- targeting premises that are licensed to sell alcohol and are associated with increased incidents of violence;
- informing alcohol licensing applications and appeals;
- developing strategies aimed at reducing the risks associated with specific weapon types (e.g. enforced use of plastic glasses, reductions in bottle availability, knife amnesties);
- informing other public health and social strategies such as drug and alcohol services.

An outcome evaluation of the Cardiff model assessed its impact on emergency department presentations for violence-related injuries and police-reported incidents of violence over time, and compared rates for these in Cardiff to rates in similar cities in the United Kingdom where such a data-sharing approach was not being implemented. The evaluation found the strategy led to a 42% reduction in hospital admissions relative to comparison cities, and a 32% comparative reduction in woundings recorded by police. The evaluation also found a 38% comparative increase in violence not causing injury ("common assaults") reported to the police (8), which the authors suggest may have been due to faster and more frequent police intervention in assaults and their precursors (such as arguments), and increased reporting of common assaults by witnesses and victims and subsequent recording by police (8). Furthermore, cost-effectiveness analysis of the Cardiff model estimates that it reduced the economic and social costs of violence by £ 6.9 million in 2007 compared with the costs Cardiff would have experienced without the programme (182). This includes a cost reduction of £ 1.25 million to the health services, and £ 1.62 million to the criminal justice system in 2007. By contrast, the costs associated with the programme were modest: set-up costs of software modifications and prevention strategies were £ 107 769, while the annual operating costs of the system were estimated at £ 210 433 (2003 rates). The cumulative social benefit-cost ratio of the programme from 2003 to 2007 was £ 82 in benefits for each pound spent on the programme, including a benefit-cost ratio of £ 14.80 for the health service and £ 19.1 for the criminal justice system (182).

The data-sharing component of the Cardiff approach has been officially adopted through a United Kingdom government Information Standard for Tackling Violence (183), which will make the collection and sharing of emergency department and police data on violence mandatory across England from July 2015. Internationally, the Cardiff model has attracted attention from cities in Brazil, the Netherlands, South Africa and the United States, in several of which there are now efforts underway to evaluate it.

Community- and problem-orientated policing

The terms community-orientated and problem-orientated policing are often used interchangeably, and refer to the systematic use of police-community partnerships and problem-solving techniques to identify underlying problems that could be targeted to alleviate violence. Police agencies explore the problems of a community, search for effective solutions to address these, and evaluate the impact of their efforts. Community- and problem-orientated policing approaches are distinguished from conventional policing strategies through their strong community engagement.

SUMMARY

■ Community- and problem-orientated policing have been evaluated for effects on crime and disorder
■ Community and problem-orientated policing show small reductions in crime and disorder
■ There is high-income country evidence only
■ Most reflect weak research designs

Relevance

Problem-orientated policing aims to address risk factors that cause crime and violence in a particular place. Problem-orientated policing involves the collection and analysis of data and other information on violence in a particular setting; engaging with the community to learn more about underlying risk factors; developing interventions to address the risk factors; and evaluating the response.

The evidence

No systematic reviews of the impact of community- and problem-orientated policing focusing specifically on youth violence or violent crime in young people were found. One systematic review *(184)* concluded that problem-orientated policing is associated with modestly increased reductions in overall crime and disorder compared to conventional policing strategies. Several studies focus on specific community policing strategies, such as foot patrols *(185)*; door-to-door visits; youth outreach *(186)* and targeted control of drinking environments.

Implementing community and problem-orientated policing programmes

A precondition for implementing community-based and problem-orientated policing strategies is the existence of a legitimate, accountable, non-repressive and non-corrupt policing system. Implementation of community-based policing further requires police professionalism, good relations between police and the public, and close collaboration between local government authorities and the community police force. While it might be desirable on one hand to keep key police officers for a longer period in the same area so that positive relationships between the police and the community can be developed, regular rotation of police is one of the main strategies to prevent corruption and might undermine the former strategy.

Feasibility and acceptability

The acceptability of community-based policing is likely to depend on the role that police have historically played in a particular community or country. In countries with very high levels of violence, policy-makers may be attracted to "hard" or "law and order" approaches to address crime and violence, and it may be difficult to generate public and police acceptance for strategies that are seen as going "soft" on criminals. Community policing might also create risks for abuses of authority, though there is little evidence for this.

Resource use

Implementation of problem-orientated policing strategies usually requires the establishment or strengthening of a unit that collects and analyses relevant data. Special funds might be needed to administer

surveys or to analyse data. It further requires substantial and sustained training of police officers and data analysts, and additional travel costs. While conventional policing approaches are relatively easy to budget for, the costs of community-based approaches can vary, as unexpected financial needs may arise as the project develops.

Community-orientated policing to reduce youth homicide in Brazil

The Fica Vivo programme is a community-orientated policing programme implemented in the state of Minas, Brazil, with the aim of reducing high youth homicide rates *(187)*. Based on the example of Operation Ceasefire in Boston, United States, the Fica Vivo programme provided financial and social assistance to reduce the dependence of young people on criminal groups, and stationed specially trained police officers in the target community for 8 hours a day, with the aim of establishing ties within the community and developing in-depth knowledge of the area.

The programme was evaluated using time-series analyses of homicide incidence data for the Morro das Pedras area of the city of Belo Horizonte from 2002 to 2006. The homicide incidence for this location was compared to other violent and non-violent neighbourhoods of the city during each of the programme phases. In the first 6 months, a 69% reduction in the incidence of homicide was observed, and while the homicide rate remained at the new, lower level, in subsequent months there were similar homicide rate declines in comparison areas *(187)*.

Reducing access to and the harmful use of alcohol

Strategies to reduce access to – and the harmful use of – alcohol include regulating the marketing of alcoholic beverages; reducing the consumption of illicit or home-brewed liquor; restricting the availability of alcohol; reducing demand through taxation and pricing; and providing accessible and affordable treatment for people with alcohol-use disorders.

SUMMARY

■ Effects of homicide rates and non-fatal assaultive violence have been evaluated

■ Reducing access to and the harmful use of alcohol reduces homicide rates and non-fatal physical violence in some settings

■ There is evidence from high- and middle-income countries

■ There are some strong research designs

Relevance

Alcohol is an important risk factor for youth violence and a situational determinant that can precipitate such violence. Individuals who start drinking at an early age tend to drink more frequently, in greater quantities and to intoxication, and have higher risks of violence *(188)*. Alcohol has physiological effects that lead to the inhibition of social control and increased violence. In many countries, alcohol use among adolescents is high. Alcohol sales in low- and middle-income countries show fast-growing consumption, whereas in high-income countries sales remain at a stable level. Alcohol interventions will eventually be relevant to countries that currently have very low levels of alcohol consumption *(189)*.

The evidence

The frequency and volume of alcohol consumption (in particular binge or episodic heavy drinking) is strongly associated with alcohol-related youth violence, and strategies that reduce the amount of alcohol consumed have been shown to reduce alcohol-related violence. One study found that a reduction in consumption of 1 litre of pure alcohol per capita per year resulted in a 7% reduction in homicides in Europe *(190)*.

A systematic review of the effects of alcohol taxation on alcohol-related consumption patterns and harm across 10 studies from low- and middle-income countries found that price increases of alcohol reduced consumption and deaths from violence *(191, 192)*. It also found that increasing alcohol taxation decreased the amount of alcohol consumed, reduced demand for alcohol in in young people, and increased the age at which people started drinking.

A review of the effects of alcohol pricing and promotion *(193)* found that setting a minimum unit price for alcohol and increasing the price of alcohol sold at very low or heavily discounted prices can reduce alcohol consumption and alcohol-related harms. A study conducted in a Canadian province found that a 10% increase in the minimum price of any given alcoholic product reduced its consumption by between 14.6% and 16.1% *(194)*.

Several individual studies reviewed whether a reduction in sales times for alcohol reduced violence. One review found that the restriction of pub closing times in one region in Australia led to 37% fewer assaults *(195)*. It has also been shown that reductions in the density of alcohol sales outlets lead to reduced consumption and alcohol-related harm *(196)*.

While many studies have shown that alcohol advertising has been shown to increase the risk of harmful alcohol use *(197)*, no studies were identified that measure the effects of bans on alcohol advertising on youth violence. A systematic review of school-based education programmes on responsible alcohol use found them to have no effects in reducing alcohol-related harm *(198)*.

One study evaluated a brief intervention for young people presenting intoxicated and with violence-related injuries in emergency departments *(199)*. The intervention consisted of motivational interviewing, skills training, role plays and referrals, and led to significantly lower levels of aggression and reduced violence in the medium term.

Feasibility and acceptability

In many populations, the restriction of general access to alcohol is unlikely to be a popular intervention. There may also be strong resistance from those who are involved in the production and trade of alcoholic beverages. For policy-makers and planners from the health sector, the reduction of alcohol consumption is an attractive intervention that brings a range of positive health benefits, as alcohol is a major risk factor for noncommunicable diseases and unintentional injuries (e.g. road traffic crashes). Very restrictive alcohol policies might however lead to an increase in the production of illicit alcohol.

Implementing programmes to reduce the harmful use of alcohol

The *WHO global strategy to reduce the harmful use of alcohol (200)* recommends that governments formulate, implement, monitor and evaluate public policies to reduce the harmful use of alcohol. These include regulating the marketing of alcoholic beverages in particular to young people; regulating and restricting the availability of alcohol; reducing demand through taxation and pricing mechanisms; raising awareness and support for policies; providing accessible and affordable treatment for people with alcohol-use disorders; and implementing screening programmes and brief interventions for hazardous and harmful use of alcohol *(200)*.

Costs and cost-effectiveness

A review of the effectiveness and cost-effectiveness of policies and programmes to reduce the harmful use of alcohol *(201)* concludes that strategies aimed at making alcohol more expensive and less available, and banning alcohol advertising, are cost-effective.

Preventing violence through a comprehensive programme including reducing access to alcohol in Brazil

A community-wide strategy to reduce alcohol-related violence was implemented in Diadema, Brazil *(202)*. The city introduced a new law requiring bars to close by 23:00, and started the Integrated Operation Project, which made the Diadema municipal guard and state police force responsible for the surveillance of vehicles, bars, deserted areas and other 'at-risk' spaces. Security cameras were installed to monitor specific areas with high crime rates *(203)*. In addition, vocational training and work placements for high-risk youths were provided, alongside a vacation club that organized activities during school holidays (a peak period for youth crime), and a life skills training programme aimed at reducing illicit drug use. The combination of these initiatives was found to decrease homicides from 389 cases in 1999 to 167 in 2003, and robberies from 5192 cases in 1999 to 4368 in 2003 *(203)*.

Drug control programmes

Drug control programmes are defined as strategies to reduce youth violence associated with the demand, supply and use of illicit drugs. They include measures addressing drug dependence and use; measures reducing violent crime committed to fund drug use; and measures to prevent violence associated with illicit drug market activity.

SUMMARY

■ Effects on drug use, drug offences and drug-related violence have been evaluated

■ Drug control programmes clearly reduce drug use and drug offences

■ Some studies have shown community violence reductions

■ There is high-income country evidence only

■ Most reflect weak research designs

Relevance

Drugs and violence are linked in various ways. First, risk factors that contribute to drug use and to violent behaviour are partially overlapping. Risk factors common to drug use and violence include low academic achievement and low attachment to school; early antisocial behaviours and attitudes; deviant peers; poor parental supervision; availability of alcohol and drugs; economic deprivation; and community disorganization *(204)*. Many violence prevention strategies included in this manual are therefore also implemented to prevent drug use and dependence *(205)*. Second, drug use may be linked to violence as many drugs influence the behaviour and physiological functioning of individuals. Third, drug-related violence can be "economically compulsive", in that individuals addicted to or dependent on illicit substances will commit crime, including violent crime, to fund their drug use. Fourth, drug-related violence can be systemic, with the use of violence to enforce the payment of debts, resolve competition between dealers, and punish informants an inherent part of illicit drug markets *(206)*.

Different drugs have differing effects on the risk for violence *(207)*. Cocaine and amphetamines in particular are associated with increased aggressive and violent behaviour, and users of cocaine and/or heroin appear to be at greater risk of observing, perpetrating and being a victim of violence than cannabis users. People under the influence of benzodiazepines have been found to be more likely to act aggressively than non-intoxicated individuals.

The evidence

Most programmes that aim to prevent young people from using drugs in the first place are not evaluated for their outcomes on violence but for their outcomes on drug use. Some studies, such as the school-

based programme targeting illicit drug use Towards no Drug Abuse *(208)*, did however also find reductions in violence and weapon-carrying. The programme found 21% less weapon carrying and 23% less violent victimization in young males who participated in the programme.

There is increasing evidence that a health-orientated approach to individuals who use drugs such as drug dependence treatment, rehabilitation and care is more effective in reducing illicit drug use and in reducing negative social consequences associated with it than criminal justice sanctions *(209, 210)*. Several studies evaluating the health and social consequences of drug treatment interventions (e.g. replacement therapies with methadone or buprenorphine) have found that they lead to small reductions in violence in the short term *(211)*.

There are several types of intervention aimed at eliminating illegal drug markets and criminal and violence activities around these. These often seek to work together with communities, service providers and families of those involved in drug dealing. While often the most dangerous drug dealers are prosecuted, those who have committed only minor offences will be warned in a community consultation. If drug selling does not stop, law enforcement strategies will be strictly applied. An evaluation of one such intervention found that it reduced drug offences by 44–56% and led to a significant reduction of violence *(212)*.

Implementing drug control interventions

Depending on the pattern and forms of youth violence associated with drug activity, policy-makers and planners must decide whether to focus on reducing demand for drugs, the supply of drugs, or a combined strategy. Most drug-related interventions require substantial technical capacity within health services and the police force.

Feasibility and acceptability

Policy-makers and the public view interventions to address illicit drug use as important. Some strategies, for example, drug replacement programmes, are often not accepted by policy-makers and the public, as they are seen as condoning drug addiction.

Costs

Comparable data on costs of drug control interventions are difficult to obtain, as contexts in which drug control measures are implemented vary widely. The few studies that exist suggest that law-enforcement interventions are more expensive than drug dependence treatment, rehabilitation and care programmes. According to one study, the cost-benefit ratio of drug-treatment to criminal justice costs is 1 to 4, and when savings related to health care are included, total savings can exceed costs by a ratio of 1:12 *(213)*.

Reducing drug-related violence in Nicaragua

The Direction of Juvenile Affairs (Dirección de Asuntos Juveniles) of the Nicaraguan police department has applied a three-stage programme to address drug-related violence. The programme includes cooperation with a health education programme to deliver education sessions on drugs, alcohol and violence for children and youth in schools; psychosocial interventions with children and adolescents at high risk of drug dependence or violence, and their families; and interventions with children and youth from gangs (e.g. helping gang members find formal employment). A qualitative study of the programme found that it lacked trained staff for the delivery of the educational and psychosocial interventions, and that there were few sustainable employment opportunities for gang members *(214)*.

Reducing access to and misuse of firearms

Measures to prevent firearms-related injuries include those addressing access, supply and use of firearms, and restrictions on the secondary trading of firearms. They include bans on specified firearms or ammunition, background checks, waiting periods and other licencing requirements, laws to prevent child access and restrictions for certain settings (for example, school premises, carrying guns in public places, etc.) *(2)*. Internationally, the Firearms Protocol of the UN Convention on Organized Crime *(215)* provides a framework for states to control and regulate licit arms and arms flows, prevent their diversion into the illegal circuit and facilitate the investigation and prosecution of related offences *(215)*. Few such measures are specific to youth or any other age group. However the high proportion of firearm-related youth homicides and non-fatal injuries mean that all such measures are particularly pertinent to youth violence.

SUMMARY

- Effects on homicide rates, shootings, gun robberies, gun assaults and weapon carrying have been evaluated
- There is some evidence that legislation can contribute to reduced arms availability and firearm-related homicide rates, shootings, gun robberies, gun assaults and weapon carrying
- There are some low- and middle-income country studies
- Most reflect weak research designs

Relevance

Globally, firearms accounted for an estimated 48% of all homicides in the year 2012 *(2)*. Firearms increase the likelihood of death and serious injury when used in acts of violence, and are frequently used to threaten individuals in violent encounters. Several case-control studies, ecological time-series and cross-sectional studies across countries indicate that gun availability is a risk factor for homicide, particularly firearm homicide *(216, 217)*.

The evidence

Two systematic reviews and one meta-analysis summarize the effects of various strategies to prevent firearm-related violence. One systematic review *(218)* concluded that there is insufficient evidence to determine whether firearm laws have any effect on violence. A recent meta-analysis *(219)* suggests that bans on the sale of firearms had small effects and law enforcement strategies had moderate effects in reducing gun violence. Another systematic review *(220)* finds that directed police patrols focusing on illegal gun carrying can prevent gun crimes (including murders, shootings, gun robberies and gun assaults). These studies conclude that more research is needed to determine the effectiveness of waiting periods, background checks, zero-tolerance policies in schools and other measures to limit firearms use in settings where they are already widely available. With one exception *(218)*, these reviews also conclude that strategies addressing access to firearms, such as bans on firearms, and the enactment and enforcement of laws against the illegal possession and carrying of firearms, show promise. Subsequent to these reviews, a study from South Africa found that stricter licensing and reduced circulation of firearms accounted for an estimated 4585 lives saved across five major cities between 2001–2005 *(221)*.

Implementing programmes to reduce access to and misuse of firearms

Implementing strategies to reduce access to and misuse of firearms requires a detailed picture of the context in which such measures are to be introduced. This includes data on homicides and firearm-related homicides, data on existing legal and illegal firearms and the types of firearms in circulation, and information on existing gun legislation.

Depending on the setting, programmes to reduce access to and the misuse of firearms may require

additional police to supervise the implementation of new legislation, public-relations programmes to inform the public, and the development of more elaborate monitoring systems. Where legislation is concerned, laws in neighbouring countries should also be considered. Countries that ban certain weapons or limit civilian possession to guns of certain types and calibres only may face the problem of illicit trafficking of these types of arms from neighbouring countries with more relaxed legislation.

Feasibility and acceptability

Restricting access to and the use of firearms demands strong commitment on the part of policy-makers and firm backing on the part of relevant ministries (e.g. interior, justice, defence). Such measures may not receive public support in all countries. Citizens in societies with high-levels of gun violence may resist efforts to reduce access to firearms because they believe that such measures will make it more difficult to obtain and keep a firearm for personal protection, and will unfairly prejudice law-abiding legal gun owners while having little effect on the use of illegally obtained firearms by criminals. Policy-makers can highlight additional benefits of firearm legislation. In the United States, for example, it has been shown that firearm legislation decreased deaths due to unintentional firearm-related injuries *(222)*, and suicides among young people *(223)*.

Costs

Firearm-related injuries are considerably more expensive to treat than most other forms of trauma, and their direct medical costs are very high *(224, 225)*. Preventing firearm-related injuries therefore has the potential to be cost-effective.

The Firearm Control Act in South Africa

In the year 2000, South Africa implemented a Firearm Control Act aimed at reducing the number of firearms in the country (particularly those in civilian hands), prohibiting the ownership of particular types of firearms, and putting in place pre-licencing background checks to establish an individual's physical and mental capacity to use a firearm responsibly. To evaluate the effects of the act on homicide, Matzopoulos and others *(221)* conducted a retrospective population-based study of homicides across five South African cities from 2001–2005 and found a decrease of homicides overall and of firearm homicides in particular. They concluded that the Firearm Control Act and its enforcement led to the saving of 4585 lives across the five cities *(221)*.

Spatial modifications and urban upgrading

Interventions encompassed by such strategies include improving urban spaces, situational crime and violence prevention measures, and crime prevention through environmental design measures. Urban upgrading measures are typically targeted at slums and low-income urban communities, and include the provision of basic services such as clean piped water, electricity, basic health care and school facilities, or measures to improve the quality of life in a certain setting, for instance by providing parks and other public places for leisure activities.

Situational violence prevention and crime prevention through environmental design aims to change the physical and environmental conditions associated with violence through improved planning, design and infrastructure. Such strategies include improved surveillance (e.g. through better street lighting); property maintenance and activities that increase public presence on the street, for example, scheduling activities in public areas. Closed circuit television (CCTV) surveillance is also included in this strategy since it is the responsibility of local authorities and is frequently a "built in" part of new developments.

SUMMARY

- Effects on violent crime and violence, including homicide rates, have been evaluated
- There is evidence that spatial modifications and urban upgrading reduce violent crime
- There are some low- and middle-income country studies
- Most reflect weak research designs

Relevance for youth violence prevention

Youth violence tends to occur in certain places more than in others. Increased levels of youth violence are often observed in places where large populations live in settings characterized by poverty, social exclusion, discrimination, ill health and poor housing conditions, and where the likelihood of being seen or caught perpetrating violence are low. Ameliorating such conditions should therefore help reduce violence. Defensible space theory *(226)* assumes that if public spaces are owned, cared for and watched by a community, violence in those spaces will be less likely to occur.

The evidence

A systematic review of a broad range of physical environment interventions *(227)* found that improved transport, lighting, buildings, police accessibility, higher vegetation levels, business improvement districts and neighbourhood initiatives to decrease physical disorder all showed promise in preventing youth violence.

Several other systematic reviews focus on specific aspects of urban upgrading and situational crime prevention measures. One review measured the effects of improved street lighting on violence and found that it reduced violent crime by 29% in the United Kingdom *(228)*. Another systematic review found CCTV surveillance to be effective in reducing violent crime only when implemented with high coverage in small, clearly laid out areas, and jointly with other interventions *(228, 229)*.

The wide variety of urban improvement initiatives and limited number of outcome evaluations makes it hard to draw firm conclusions about the effectiveness of particular interventions in preventing youth violence. Overall, programmes that make improvements to the physical environment appear to hold promise as youth violence prevention measures.

There are also additional secondary benefits associated with urban improvement interventions, such as increased opportunities for social and economic development and a healthier environment.

Implementing spatial modifications and urban upgrading

Situational crime prevention is typically considered for areas with high levels of violence and crime. These interventions usually start with a security assessment and stakeholder analysis, followed by a planning process with strong involvement of the communities concerned. Impacts on the areas surrounding the target community should be considered. Urban development interventions require close collaboration with local government structures and the involvement of sectors that typically are not considered important to youth violence prevention, such as housing and transport.

Feasibility and acceptability

Urban upgrading interventions usually have other positive effects for residents by making their surroundings healthier and more attractive to live in, and there is generally public support for these measures. Community involvement in programme design and delivery is important to develop a sense of ownership and increase the chances of success and sustainability.

Costs

The cost of urban upgrading interventions varies due to the wide range of potential interventions. While some interventions require substantial investments in infrastructure, specialized staff and regular

maintenance, other interventions that are targeted at improving living conditions in small residential areas (e.g. street lighting, sidewalks, safe houses, community centres, and the improvement of public spaces) can be implemented at somewhat lower cost.

> **Urban upgrading in Medellín, Colombia**
>
> In 2004, municipal authorities in Medellín, Colombia, built a public transport system to connect isolated low-income neighbourhoods to the city's urban centre. Transit-orientated development was accompanied by municipal investment in the improvement of neighbourhood infrastructure. Rates of violence were assessed in intervention neighbourhoods and comparable control neighbourhoods before (in 2003) and after (in 2008) completion of the project, using a longitudinal sample of 466 residents and homicide records from the Office of the Public Prosecutor. Intervention neighbourhoods showed a 66% greater decline in homicide rates than control neighbourhoods, and resident reports of violence decreased 75% more in intervention neighbourhoods than in control neighbourhoods *(230)*.

Poverty de-concentration

Poverty de-concentration strategies aim to reduce poverty by offering vouchers or other incentives for residents of economically impoverished public housing complexes to move to better neighbourhoods. This change is presumed to offer new social opportunities and better public facilities that can help to improve socio-economic status. Typical approaches include housing and social mobility programmes.

SUMMARY

- Effects on life-time arrests for violent crime have been evaluated in few settings
- Poverty de-concentration probably reduces arrests for violent crime in the short term
- There is evidence from few high-income countries only
- Most reflect strong research designs

Relevance for youth violence prevention

Youth violence is in part related to the spatial concentration of low-income households in high-poverty, high-crime urban neighbourhoods. It is assumed that providing the opportunity for families with a high risk of violence to move to more affluent areas, and improving living conditions in these neighbourhoods, can reduce violence.

The evidence

Two housing and social mobility experiments in the United States (known as the Moving to Opportunities programme) tested the impact of moving families living in public housing projects in severely disadvantaged neighbourhoods into neighbourhoods with much lower poverty rates, using private housing vouchers. These experiments found a significant reduction of lifetime violent-crime arrests of 33% for females *(231)* 4–7 years after the intervention, but not for males. However, subsequent long-term analysis of the data *(232)* found that in the first 4 years after the intervention, violent-crime arrests among experimental group males were almost a third lower than among control group males, but that these effects became weaker over time.

Resettling populations from one neighbourhood to another might lead to cultural isolation, discrimination and negative mental health consequences for the individuals relocated. Positive side effects can include increased access to better education and services *(232)*.

Implementing poverty de-concentration programmes

The relocation schemes described here were implemented through the provision of vouchers to allow low-income families to rent apartments or houses in more affluent areas. In other settings, relocation schemes are implemented either voluntarily, whereby affected persons choose their own destination, are usually compensated for construction costs in the new site, and receive an inconvenience allowance; or through forced relocation to new residential areas as determined by local authorities.

Feasibility and acceptability

Resettlement schemes face political and logistical challenges. There is often little interaction with new neighbours in relocation sites, and considerable resistance by existing homeowners. In the Moving to Opportunity experiment, resistance was encountered from residents who feared neighbourhood decline when voucher recipients moved into their areas. Many relocation schemes in low- and middle-income countries appear to have failed because appropriate open land at prices affordable to the public sector could not be found; the locations identified were too far from places of employment; or the programmes disrupted social support networks that help people cope with difficult situations and offer a sense of identity and belonging.

Costs

In the Moving to Opportunity scheme, costs included the provision of housing vouchers that cover rent and additional costs; counselling for participating families; assistance to families to find appropriate housing; and working with landlords to encourage their participation. Costs amounted to US$ 7000 per recipient case per year, of which US$ 650–2800 were direct contributions to beneficiaries. The annual benefits were estimated to range from about US$ 7700 to US$ 9600 *(232)*. Due to their high costs, schemes involving poverty de-concentration might not be feasible in low- and middle-income countries, and the upgrading of existing structures might be a more cost-effective option.

Moving to Opportunity

Moving to Opportunity is a residential mobility experiment implemented by the United States Department of Housing and Urban Development. A randomized lottery provided families living in high-poverty public housing at five sites (Baltimore, Boston, Chicago, Los Angeles, and New York) with the opportunity to move to lower-poverty neighbourhoods with a housing voucher. The experimental group was offered a housing voucher that could only be used in neighbourhoods where the poverty rate was 10% or less. This group was also provided with counselling to help locate an appropriate housing unit and neighbourhood. The second intervention group received a standard housing voucher that could be used for any apartment that met basic standards, but was not restricted geographically. The control group did not receive any voucher, but could use the regularly available social services. Evaluations found significant reductions of arrests for violence and violent crime in the first 4 years after the intervention in the experimental group *(232)*, but these effects were not sustained in the long-term.

Overview of evidence

Table 4 provides an overview of the youth violence prevention strategies reviewed in this chapter, and what is known about their effectiveness. The strategies are grouped into four categories based on the context in which they are delivered.

The table shows that while for each of the implementation contexts there is at least one strategy that is promising for preventing youth violence, many strategies are of uncertain effectiveness because of insufficient evidence. In early childhood, teaching positive parenting skills and early childhood development programmes were both rated as promising, and home visiting as requiring more research to establish its effectiveness in preventing subsequent youth violence.

Among the school-based strategies, life and social skills development programmes, and bullying prevention programmes are both rated as promising, whereas academic enrichment programmes, financial incentives for adolescents to attend school, and structured leisure time activities were found to require more research as to their effectiveness. Dating-violence prevention and peer mediation programmes were found to have contradictory evidence on their effectiveness, with peer mediation programmes also being shown in some studies to have harmful effects in the form of increased youth violence.

Of the strategies for youth at higher risk of violence, only therapeutic approaches (such as cognitive behaviour therapy) for youth already showing aggressive behaviour emerged as promising in preventing youth violence, with vocational training, mentoring, and gang and street violence prevention programmes having insufficient evidence to assess their effectiveness.

At community and societal level, hotspots policing; community- and problem-orientated policing; reducing access to and the harmful use of alcohol; drug control programmes; reducing access to and the misuse of firearms; spatial modification and urban upgrading, poverty de-concentration were all rated as promising in preventing youth violence.

Effectiveness of youth violence prevention strategies, by context

Parenting and early childhood development strategies	Home visiting programmes	**?**
	Parenting programmes	**+**
	Early childhood development programmes	**+**

School-based academic and social skills development strategies	Life and social skills development	**+**
	Bullying prevention	**+**
	Academic enrichment programmes	**?**
	Dating violence prevention programmes	**+/-**
	Financial incentives for adolescents to attend school	**?**
	Peer mediation	**+/-**
	After-school and other structured leisure time activities	**?**

Strategies for young people at higher risk of, or already involved in, violence	Therapeutic approaches	**+**
	Vocational training	**?**
	Mentoring	**?**
	Gang and street violence prevention programmes	**?**

Community- and society-level strategies	Hotspots policing	**+**
	Community- and problem-orientated policing	**+**
	Reducing access to and the harmful use of alcohol	**+**
	Drug control programmes	**+**
	Reducing access to and misuse of firearms	**+**
	Spatial modification and urban upgrading	**+**
	Poverty de-concentration	**+**

KEY

+ Promising (strategies that include one or more programmes supported by at least one well-designed study showing prevention of perpetration and/or experiencing of youth violence, or at least two studies showing positive changes in key risk or protective factors for youth violence).

? Unclear because of insufficient evidence (strategies that include one or more programmes of unclear effectiveness).

+/- Unclear because of mixed results (strategies for which the evidence is mixed – some programmes have a significant positive and others a significant negative effect on youth violence).
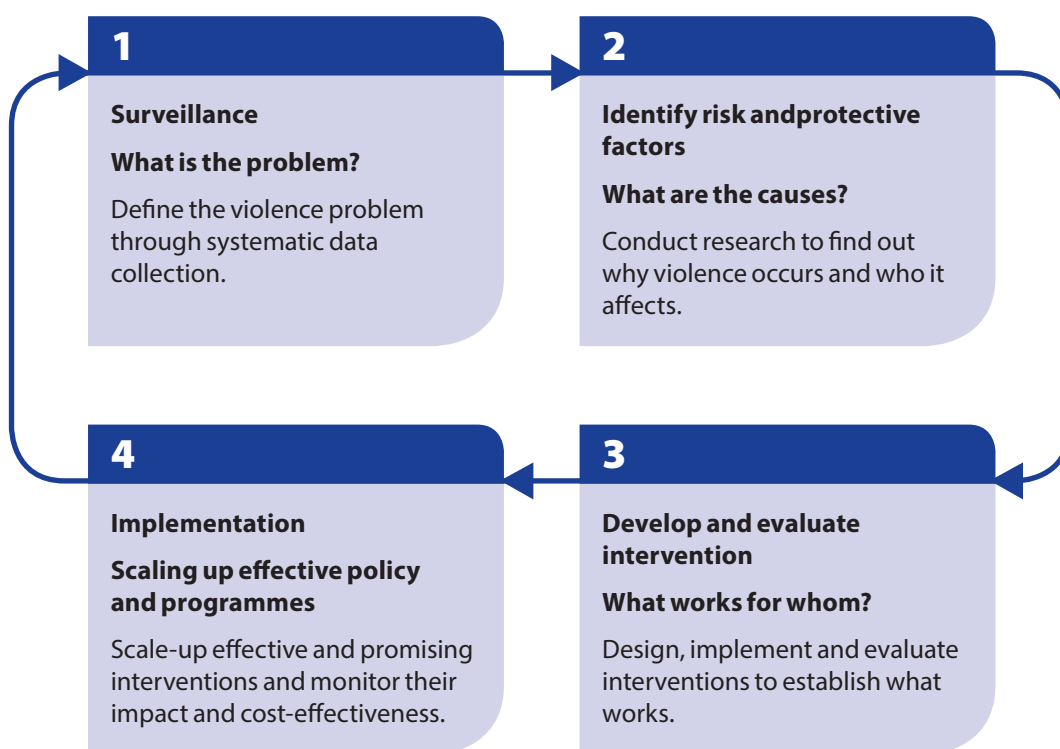
4

What governments and civil society can do to implement youth violence prevention programmes

Successful youth violence prevention requires a conceptual and organizational foundation that supports the development, implementation, maintenance and monitoring of interventions, programmes and policies. Such a foundation should therefore draw upon many of the same capacities that are needed – and which in many cases will have already been developed – for other public health problems. Efforts should thus be made wherever possible to address youth violence prevention by building upon the infrastructure developed to address other public health problems.

Accordingly, the public health approach to violence prevention shown in Figure 3 is a useful framework for organizing youth violence prevention efforts in a way which helps to link them to other ongoing public health activities. This approach also highlights the importance of ensuring that as preventive actions are being taken, evidence on their effects is generated and fed back into the process.

FIGURE 3

Public health approach to violence prevention

1

Surveillance

What is the problem?

Define the violence problem through systematic data collection.

2

Identify risk andprotective factors

What are the causes?

Conduct research to find out why violence occurs and who it affects.

4

Implementation

Scaling up effective policy and programmes

Scale-up effective and promising interventions and monitor their impact and cost-effectiveness.

3

Develop and evaluate intervention

What works for whom?

Design, implement and evaluate interventions to establish what works.

Source: Based on Krug et al *(1)*.

By definition, public health aims to provide the maximum benefit for the largest number of people. In practice, a public health approach to preventing youth violence involves the four steps shown in Figure 3. Step one is to define the magnitude, scope, characteristics and consequences of such violence through the systematic collection of information. Step two is to identify and research the risk and protective factors that increase or decrease the likelihood of youth violence, including those that can be modified through interventions. Step three is to determine what works in preventing youth violence by developing and evaluating interventions tailored to the demographic and socioeconomic characteristics of the groups in which they are to be implemented. Step four is to implement effective and promising interventions in a wide range of settings and, through ongoing monitoring of their effects on the risk factors and the target problem, to evaluate their impact and cost-effectiveness *(1)*.

While the public health approach provides an easily understood framework for organizing youth violence prevention efforts, the main challenge lies in getting governments and other violence prevention stakeholders to adopt such an approach in the first place. In many settings, the idea that youth violence can be prevented is likely to be new, and it is therefore important to build the necessary human and institutional foundations before attempting to initiate a public health approach to the problem. Accordingly, this chapter reviews six activity areas by which the readiness to implement a public health approach to youth violence prevention can be increased.[1] The six areas are:

1. raising awareness about prevention;
2. developing partnerships across sectors;
3. strengthening knowledge about the importance of data collection on fatal and non-fatal youth violence, and on risk and protective factors;
4. enhancing the capacity to evaluate existing prevention programmes;
5. establishing a policy framework, and
6. building capacity for youth violence prevention.

Because this manual aims to enhance youth violence prevention efforts in settings with limited resources, the options for action under each area include core responses that can be undertaken without additional resources; expanded responses that require extra resources; and desirable responses for which considerable additional resources may be required.

1. Raising awareness about prevention

A fundamental component of youth violence prevention efforts is to raise awareness of the problem among programme- and policy-makers. Because ministries of health generate much of the available data on youth violence and oversee the treatment of a substantial proportion of its victims, they are well positioned to campaign for more attention to these issues. Three types of awareness are relevant here: awareness within the ministry of health, awareness among other sectors, and public awareness.

Awareness within the health sector

For some health ministries, the idea that they can have a major role to play in an intersectoral, public health approach to preventing youth violence may be new. In these instances, it is important to raise awareness about why they should take a leading role in youth violence prevention by emphasizing the following four points.

First, health ministries have a duty to prevent and respond to all major causes of deaths and morbidity, and, as outlined in Chapter 2, violence is a leading cause of death, non-fatal injury and disability in youth. Furthermore, WHO Member States have committed themselves through several World Health Assembly resolutions to implementing a public health approach to violence prevention *(234, 235)*. Third, health ministries have a powerful economic interest in preventing youth violence, since it absorbs a substantial proportion of the direct costs arising from treating violence-related injuries and other mental health and behavioural consequences of violence. Fourth, ministries of health are uniquely positioned to collect data, analyse risk factors, provide emergency and long-term care, coordinate multisectoral prevention efforts across a range of sectors, and campaign for political and legislative change. In many countries, if the ministry of health does not conduct these activities in the field of youth violence prevention, no other body will *(233)*.

Awareness among other sectors

Applying the principles of prevention in the field of youth violence is an unfamiliar approach in many countries. Health ministries can therefore help to raise awareness among other sectors about the social and economic value of adopting an evidence-informed approach that harnesses the input of

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[1] Much of this chapter is adapted from *Preventing injuries and violence: a guide for ministries of health (233)*.

multiple sectors to address underlying causes and risk factors. Among other ways, this can be done through seminars, workshops and newsletters, and by inviting relevant groups to discuss their roles and responsibilities in youth violence prevention. Health ministries should use the data they collect to inform decision-makers about the nature and scale of youth violence in their countries – including epidemiological data on the issue, the direct and indirect economic costs, and proven and promising prevention measures (such as those reviewed in Chapter 3 of this manual).

Ministries of health also sometimes need to call for government ministries, United Nations agencies and nongovernmental organizations to collaborate on a particular health topic. In raising awareness about the government's prevention responsibilities, ministries of health should also draw on global and regional resolutions adopted by United Nations organizations, such as the World Health Assembly resolutions on violence prevention (23, 235), and the United Nations Economic and Social Council's resolution on strengthening social policies as a tool for crime prevention *(236)*.

Nongovernmental organizations are another powerful source for health ministries to draw on in raising awareness. Indeed, in many countries, groups of victims of violence and their families are among the most vigorous in campaigning for prevention. For instance, such groups have been active in arguing for increased investment in the prevention of child maltreatment. Tragic incidents – such as shootings in schools or the violent death of a well-known person – often trigger huge public concern. If this concern is effectively channelled, it can produce a rapid and sustained increase in political commitment to youth violence prevention. Wherever appropriate, health ministries should support such nongovernmental efforts so as to strengthen support for youth violence prevention.

Public awareness

Government-sponsored awareness campaigns should inform people about the nature, magnitude and consequences of youth violence, and how it can be prevented. They should also correct public misconceptions surrounding the causes and preventability of youth violence. Such campaigns should be coordinated with the introduction of new laws and policies, so as to increase public awareness of them. Information campaigns can accompany prevention efforts, highlighting, for instance, the un-acceptability of bullying in schools or the importance of better regulating access to alcohol and its misuse as a means of preventing youth violence. Launches of new policies, programmes or publications on violence often provide good opportunities for ministries of health to raise public awareness.

Campaigns can also be built around high-profile events on the global calendar, such as International Youth Day (12 August). Involving prominent public figures and the local and national media in campaigns

The Jamaican chapter of the Violence Prevention Alliance

In 2004, Jamaica's Minister of Health set up the national chapter of the global Violence Prevention Alliance. Launching it, the minister reiterated the importance of the public health approach, and the involvement of a range of diverse sectors in preventing violence in general and youth violence in particular. Globally, the Violence Prevention Alliance has six objectives guiding its work, which are to:

- increase collaboration and the exchange of information on violence prevention;
- support the implementation and monitoring of national plans of action to prevent violence;
- enhance the capacity for data collection on violence;
- promote the primary prevention of violence;
- strengthen support services for victims of violence;
- support the integration of violence prevention into social and educational policies.

To carry out these objectives, the Jamaican chapter has created a steering committee and a working group composed of representatives from a broad range of stakeholders *(233)*.

built around these events can boost their impact. If well planned and executed, these campaigns can help to build broad coalitions for action.

It is important, though, to note that information or publicity campaigns on their own are ineffective in preventing youth violence, and that they should only be undertaken when linked to longer-term youth violence prevention strategies that address underlying causes and risk factors.

Options for action to raise awareness

CORE	EXPANDED	DESIRABLE
Introduction to and consultations with key persons from government including ministries of justice, education, and social services. Develop/adapt and disseminate a policy brief describing the scale of victimization and consequences of youth violence, and effective interventions to prevent it.	Organize a national policy discussion around youth violence prevention with representatives from various sectors. Develop an awareness-raising campaign and distribute printed and electronic documents. Organize a study tour for policy-makers and planners to visit emergency wards, police, and youth violence prevention programmes.	Produce educational materials, brochures, pamphlets, posters, videos, slides, multimedia, web sites, and electronic bulletins. Organize conferences, workshops, and group discussions on youth violence. Work with the media to organize news conferences, television and radio shows and training for journalists on how to report on youth violence in newspapers and the media. Document adverse long-term consequences of youth violence.

2. Developing partnerships across sectors

Effective youth violence prevention programmes are likely to involve several different sectors and organizations, and the health sector is well placed to play an important role in the coordination and facilitation of such multisectoral interventions. Establishing joint working arrangements between these partners from the beginning is one of the key factors for successful and effective prevention programmes. Core sectoral partners are likely to include police and criminal justice; education; social services and child protection; authorities responsible for regulating access to alcohol; local government; and nongovernmental organizations working with young people.

Consulting with different sectors

Consulting with governmental and nongovernmental groups from different sectors is essential for the development of strong partnerships, and for ensuring that they invest in a common youth violence prevention effort or policy. While attempting to involve every agency that appears relevant will not be easy, failing to consult a key group could harm the effort and result in that group rejecting the proposed programme.

At the start of a prevention programme, individuals from different sectors may tend to restrict themselves to the areas of their expertise. Psychologists, for instance, may see their role as counselling victims of violence; the police may press for more resources to catch and punish perpetrators; and medical professionals may be focused on issues of trauma care. For success in youth violence prevention, it is necessary to use these particular competence-based perspectives and skills, and to embed them in a broader strategic framework where there are shared priorities and goals.

Options for partnership action

CORE	EXPANDED	DESIRABLE
Identify focal points for youth violence prevention from other sectors and organize an informal meeting with at least two other sectors.	Establish a formal partnership with key sectors. Establish a coordination platform and terms of reference.	Develop a partnership workplan, which is reflected in the annual workplans and budgets of the individual organizations that are members of the partnership.
Share information about your current work and goals, identify common interests, and establish a mechanism to regularly exchange information.	Explore joint initiatives and projects that do not require substantial additional resources (e.g. joint mechanisms for data exchange).	
Develop a stakeholder map for youth violence prevention.		

3. Strengthening knowledge about the importance of data collection on fatal and non-fatal youth violence, and on risk and protective factors

Understanding the extent of youth violence in a country is essential for developing effective policies and strategies to address the problem. Once an understanding is achieved, policy-makers are in a position to make informed decisions about priorities in the face of competing demands on resources. For many countries, assessing the scale of youth violence is critical for harnessing the political will, public support and funding needed to launch programmes. Accurate data are also required to evaluate the evolving success and cost-effectiveness of strategies for youth violence prevention.

Since collecting data can be costly, it is important that what is gathered should be actively shared and used to advance prevention efforts, rather than kept confidential or collected simply for the sake of amassing statistics.

Sources of youth violence data

Data on the magnitude and consequences of youth violence, and risk factors for it, can be obtained from a wide range of governmental and nongovernmental sources. Potential sources of data on youth violence are listed in Table 5.

Government departments, including those of education, welfare, labour, justice and the police – as well as national statistics bodies – all represent potential sources of data. As every data system has its weaknesses, it is best to compile and coordinate data from a number of such systems.

Role of the ministry of health in data collection

Because of its unique access to victims of interpersonal violence, the ministry of health plays a pivotal role in data collection. Without ministry of health data, national statistics on violence are likely to be severely underestimated *(1)*. The health ministry and its partner agencies should ideally collect the following information, preferably in a way that allows for disaggregation of the data by victim age and sex, and mechanism (e.g. firearm) of the violence-related injury:

- deaths due to violence;
- non-fatal violence-related injuries;
- disability resulting from youth violence;
- adverse health consequences other than injuries that result from violence;
- the geographical distribution, settings and circumstances of incidents, and
- the economic impact of violence, including costs to the health-care system.

Vital registration systems recording all deaths can be an excellent starting point. The health ministry and partner agencies should promote data sharing between sectors, and make public the results of their findings to help advance prevention efforts.

TABLE 5

Potential sources of data on youth violence

TYPES OF DATA AND POTENTIAL SOURCES FOR COLLECTING INFORMATION		
TYPE OF DATA	DATA SOURCES	EXAMPLES OF INFORMATION COLLECTED
Mortality	Death certificates, vital statistics registries, medical examiners', coroners' or mortuary reports	Characteristics of the decedent, cause of death, location, time, manner of death
Morbidity and other health data	Hospital, clinic or other medical records	Diseases, injuries, information on physical, mental or reproductive health
Self-reported	Surveys, special studies, focus groups, media	Attitudes, beliefs, behaviours, cultural practices, victimization and perpetration, exposure to violence in the home or community
Community	Population records, local government records, other institutional records	Population counts and density, levels of income and education, unemployment rates, divorce rates
Crime	Police records, judiciary records, crime laboratories	Type of offence, characteristics of offender, relationship between victim and offender, circumstances of event
Economic	Programme, institutional or agency records, special studies	Expenditures on health, housing or social services, costs of treating violence-related injuries, use of services
Policy or legislative	Government or legislative records	Laws, institutional policies and practices

Source: *(1)*, *(233)*

In addition to data on violence, the ministry of health should collect information on the types and distribution of available services, and the numbers of patients with violence-related conditions dealt with by these services. Ministries can then use this data to identify service gaps and make the case for more resources to fill them.

Putting violence and injury information systems in place

Countries without specific violence and injury surveillance systems can still make use of the data sources listed in Table 5 to investigate the extent and nature of youth violence, and to monitor trends over time. Moreover, with a small amount of effort and modest additional cost, some of these data sources can serve as the basis for an ongoing violence and injury surveillance system. Given that emergency medical services for severely injured victims of youth violence are the same as those provided for persons injured as a result of other causes (e.g. road traffic crashes), violence and injury information systems should always be designed to capture information on injuries from all causes.

The main sources for this purpose are death certificate data, hospital inpatient records and emergency department records. WHO, with support from the United States Centers for Disease Control and Prevention, has developed the *Injury surveillance guidelines*, available online, offering step-by-step assistance on how to develop such surveillance systems *(237)*. When using hospital-based data, experience from many countries has shown that the best way to proceed is to pilot the system in a major hospital first, and then make changes to the data collection form and expand the system to other hospitals. Many health ministries around the world have used these guidelines to set up injury information systems.

Existing sources of data often underestimate the extent of injuries related to youth violence, for a variety of reasons. These include the fact that many instances of youth violence are not reported to police. In some countries, only 10–20% of deaths of any type are officially registered with the government, and many injuries – even serious ones – do not receive formal medical care. Hospital data, whether inpatient or emergency department, cannot include those who do not seek care, and this is likely to be the case for

many victims of youth violence. Conducting periodic household and school-based surveys is therefore important.

Why surveys of youth violence are important

Specialized household and school-based surveys may be appropriate for gaining a deeper understanding of youth violence and related behaviours that are known to be poorly represented in routinely collected statistics – including bullying, weapon-carrying, involvement in physical fights, involvement with gangs, alcohol and drug use. To conduct household surveys, health ministries can use the WHO *Guidelines for conducting community surveys on injuries and violence (238)*, and for school-based surveys the GSHS methodology *(12)*. Alternatively, they can insert questions on injury in a national demographic health survey to complement hospital and other existing data.

Data from surveys should always be reported by age and sex to provide the fullest understanding of the problem. Data may also be recorded by subgroups known to be at increased risk – for example, those of low socioeconomic status (the list of susceptible groups varies from country to country).

Supplementing available information with research

Information is lacking in most countries on risk factors, behavioural determinants, levels of awareness and risk perception, and readiness to change behaviour. Surveillance and surveys also cannot provide all the required information about risk factors, nor can they test good practices or youth violence prevention programmes. These systems therefore need to be supplemented with rigorous research. Although the ministry of health does not usually conduct such studies itself, it should support research by collaborating with respected research institutions, such as schools of public health or universities that can do the work.

Compiling and disseminating data

In some ministries the ability to conduct data collection is severely limited by a lack of resources. Nevertheless, it should at least be possible to collect and compile existing data from other ministries and other sources. Data very often exist but lie unanalysed or unused. Such data – especially on leading causes of death and emergency department visits – can be compiled at low cost and transformed into powerful material that demonstrates the need for prevention efforts.

Options for action in improving data collection and dissemination

CORE	EXPANDED	DESIRABLE
Identify existing data sources that contain information on the prevalence, consequences and risk factors for youth violence.	Compile existing data on youth violence. Draft a policy brief informed by existing data.	Conduct and regularly repeat a nationwide population-based survey on prevalence and risk factors for youth violence. Ensure that existing health information systems, emergency department trauma registries and vital registration systems for causes of death capture age-and sex-disaggregated data on violence using International Classification of Disease codes.

4. Enhancing capacity to evaluate existing prevention programmes

From the outset, national youth violence prevention policies and plans must include efforts to monitor and evaluate the effectiveness of prevention policies and programmes. Measures of effectiveness should cover the short, middle and long term. It is particularly important to establish baseline measurements before an intervention is implemented.

Monitoring of youth violence at the population level

As with other public health problems – such as HIV/AIDS, malaria and smoking-related diseases – the monitoring of youth violence at the population level is typically achieved by setting up indicators to

track changes in the nature and extent of both the problem being addressed and of the risk factors. With HIV, for instance, incidence rates of infection and rates of condom use might be measured. Depending on the vital statistics and health information systems available, it may be possible in some places to monitor indicators using routinely collected information. Elsewhere, where information systems are less developed, and for behavioural indicators that cannot be measured through such systems, monitoring is done through periodic population-based surveys. These include such methods as surveys of crime victimization or youth risk behaviour. By developing and monitoring indicators at the population level, ongoing feedback is provided on trends in the target problems and in the risk and protective factors. This feedback makes it possible to measure the impact on youth violence of specific prevention programmes, and to track how the problem is responding to other policies and programmes that – while not intended to prevent youth violence – nonetheless influence risk factors and social determinants, such as economic inequality and employment.

Whereas monitoring involves tracking a few youth violence indicators over time, the evaluation of specific youth violence prevention programmes involves a far more in-depth research process aimed at finding out if a particular programme is having its intended effects. This is known as outcome evaluation.

Outcome evaluation of specific youth violence prevention programmes

Outcome evaluation specifically seeks to determine if an intervention was successful in bringing about the intended changes (for example, in risk factors, behaviours, or in levels of violence-related injuries and deaths). The main concern when designing an outcome evaluation is to ensure that any alternative explanations for the changes observed can be ruled out in order to have confidence that these changes were due to the intervention and no other factors. This will ensure resources are not wasted on ineffective or less-effective interventions. Accordingly, any outcome evaluation must compare how levels of youth violence in groups exposed to an intervention change over time and in comparison to very similar groups of people living in the same kind of environment and who were not exposed to the intervention.

Because of the geographically limited evidence base for youth violence prevention programmes, it is vital to ensure that those in low- and middle-income countries incorporate evaluation plans. Rigorous outcome evaluation requires scientific expertise from the start of the planning phase to ensure the appropriate selection of prevention objectives; the development of a logic model; and the correct choice of research design, study populations, outcomes, data sources and methods of analysis. As a result, partnership with an academic or research institution that has a strong record in conducting outcome evaluation studies is often essential.

Ultimately, the selection of the outcome-evaluation approach to be taken will be guided by the questions to be answered and the degree of certainty required in attributing observed effects to the intervention. The benefits of each approach will need to be weighed against the practical and financial constraints of the intervention programme. Different types of outcome evaluation may also be helpful at different programme stages. For example, at the beginning of a new prevention strategy, collecting pre- and post-programme implementation data from participants can help to determine if the approach looks promising. Positive indications would include that changes appeared to be in the right direction, of sufficient magnitude, or similar to (or better than) other programmes targeting similar outcomes. Later, a controlled-trial or randomized control trial design can be used to provide more evidence that the intervention was indeed contributing to the desired changes. Once it is determined that the strategy works, the routine incorporation of outcome data collection can be used to monitor the continued effectiveness of the intervention.

Options for action on monitoring and evaluation

CORE	EXPANDED	DESIRABLE
Conduct developmental and process evaluations of your violence prevention programmes. Identify data sources that can provide information about the effectiveness of your programme, project or policy from existing data sources, e.g. emergency department records. Collect at least implementation data (e.g. information on dropouts); conduct focus groups and in-depth interviews with various stakeholders to identify potential strengths and weaknesses of the programme.	Conduct a simple outcome evaluation by collecting data before and after the intervention, ideally comparing findings for the group that received the intervention with a comparison group that have the same characteristics but did not receive the intervention.	Conduct quasi-experimental outcome evaluations or randomized-controlled trials with an experimental and a control group, which is similar to the group that receives the intervention but is not exposed to the programme. Publish your evaluation results in scientific journals.

5. Establishing a policy framework

Policy documents, such as national strategies and plans of action, are important for ensuring the good planning, coordination and implementation of youth violence prevention activities. There are several issues to consider with regard to such policies and plans.

- A section on youth violence prevention should be included in every national plan for public health.
- Each ministry of health should develop a national plan of action on violence prevention. This document should clearly define the ministry's planned activities and output, and provide more detail than can be included in the overall national plan for public health.
- Where possible, an additional plan of action guiding collaboration between sectors is desirable. Such a plan should be developed by representatives from the sectors concerned – such as those of health, justice, and education – setting out the activities and outcomes to be achieved by each, and in this way facilitating collaboration between various ministries.

Development of a youth violence prevention plan of action for the health sector

The ministry of health should take the lead in the development of an action plan for the health sector. Experience has shown that the process of developing a national or local policy document is as important as the document itself. The process should involve representatives from the government, nongovernmental organizations and academia, and include all relevant sectors. A good starting point is to assess current prevention activities in order to identify gaps, determine which data are available, and map out the main individuals and groups involved in prevention.

Formulating a national plan of action requires discussions about definitions, objectives and indicators. It should cover all relevant topics – data collection, prevention policies, laws and programmes, capacity building and awareness-raising. Particular attention needs to be given to ensuring that standalone prevention efforts – such as those on child maltreatment, bullying prevention and the prevention of alcohol-related violence – are adequately incorporated into the broader agenda of youth violence prevention. All plans of action should take into account the differing needs of children, adolescents and young adults as victims of youth violence and actual or potential perpetrators.

Multisectoral plans of action

Ideally, countries should also develop a plan of action to guide collaborative youth violence prevention work between the health sector and other sectors including justice, education, labour, finance, law enforcement and social welfare – all of whom have important roles to play in preventing youth violence. Coordinating efforts between these different sectors is not a straightforward task, particularly in

countries where multisectoral projects are uncommon. However, it is something the ministry of health can facilitate by supporting the joint development of a plan of action that formalizes the roles of the various agencies in youth violence prevention work.

The need for such multisectoral work has long been recognized in other areas of public health. In malaria prevention, for example, the ministry of health has to work alongside the ministry of public works to drain swamps. There is no single way of approaching this task and the questions of whom to collaborate with and how to do so will depend on the particular project at hand. Collaborative efforts might, for instance, be strengthened by first disseminating reports from the health ministry's violence prevention unit to other appropriate ministries; and by conducting in-house training within other ministries to raise knowledge and awareness on areas on which collaboration is to take place. Focal points and violence prevention units should make a list of those policy issues that could most usefully benefit from wider support, and systematically pursue collaboration on those issues with other sectors.

Legislative efforts

The enactment and enforcement of legislation on crime and violence are critical for establishing norms of acceptable and unacceptable behaviour, and creating safe and peaceful societies. Of particular importance are strategies to enable safe reporting of interpersonal violence and ensuring that legal protection and support are available to all citizens. In certain circumstances the threat of criminal sanctions can have a deterrent effect, for instance on people with strong social ties to perpetrators or when the certainty – but not necessarily the severity – of sanctions is high. An important objective for youth violence prevention is therefore to strengthen collaboration between public health, the criminal justice sector, and key security institutions such as the police in order to increase the chance that potential perpetrators of youth violence will be deterred from committing crime in the first place (and if not, at least held accountable for their actions). Where necessary, support to strengthen the relevant institutions in these sectors can help to improve enforcement levels.

Laws of particular relevance for youth violence prevention

In developing youth violence prevention policies and programmes it is critical to review existing legislation with a view to identifying legislative gaps that may need to be filled through the enactment of new laws, and existing laws that may be inadequately enforced. It can also be helpful to review existing legislation on youth violence prevention in other countries, especially those with similar social and cultural settings.

Examples of laws that may be used to modify risk factors for youth violence include laws on: alcohol pricing, taxation and access; prohibiting the corporal punishment of children and child maltreatment; the detection and reporting of child abuse; firearm ownership, access and carriage; and laws against gang membership. Laws that can help to strengthen protective factors for youth violence include those relevant to housing, social security, education and employment.

Options for developing a policy framework

CORE	EXPANDED	DESIRABLE
All steps of the policy development process are key to youth violence prevention efforts and can be pursued with almost no or very few additional resources.		
Review existing laws on youth violence prevention.		

6. Building capacity for youth violence prevention

The prevention of youth violence requires knowledgeable and skilled staff, supportive structures and good networks. All of these areas may need strengthening, and ministries of health have a vital role to play in achieving this.

Building human resource capacity

Proper training is essential to help build human resource capacity. This applies to all individuals, from staff members, including focal points, to senior policy-makers. The goal is to have professionals from a wide range of backgrounds operating in the field of youth violence prevention with a common base of knowledge and skills. Training in violence prevention has up to now not been routinely addressed. Health ministries can address this shortcoming by focusing on:

- **training for youth violence prevention.** Such training should routinely take place, both in academic institutions – within schools of public health, nursing and medicine – and as in-service training for medical personnel, data collectors and relevant staff in other government departments. A useful tool for this purpose is TEACH–VIP, a modular training curriculum on injury and violence prevention. TEACH–VIP was developed by WHO with the support of a network of experts around the world, and has been successfully used by government agencies, injury centres, nongovernmental organizations and academic departments *(239)*.
- **technical and professional skill development.** Relevant technical skills include carrying out research and setting up surveillance systems. Professional skills include project management, fundraising, communications, and leadership. The ministry of health should identify key individuals and support their training – including through exchange visits, collaboration with other institutions and mentoring.

Maintaining effective networks

Collaborative networks – both within countries and between countries – are an important element of youth violence prevention. Within countries, prevention efforts are likely to be distributed across a range of public and private sectors and for this reason require good coordination. Ministries of health can help by setting up national networks linking sectors for more efficient exchange of information, planning and action. Between countries, technical exchanges can speed the uptake of best practices in the field and help formulate policy agendas.

Options for developing capacity

CORE	EXPANDED	DESIRABLE
Integrate youth violence prevention into existing curricula and trainings for health and social workers. Establish a focal point or unit in charge of youth violence prevention.	Develop jointly with other sectors and NGOs a strategy on how to increase human capacity for youth violence prevention.	Establish a career path for violence prevention professionals. Establish university courses or studies in the area of violence prevention.

Conclusion

Youth violence is not a simple problem with easy solutions. However, improvements in prevention, especially in low- and middle-income countries, are possible. There is enough knowledge and experience on the subject for any country to begin addressing the problem. One of the greatest obstacles to effectively preventing youth violence has been the lack of information on what works, and on the feasibility of implementing such strategies in low- and middle-income countries. This manual has therefore discussed how strategies and programmes can be built on evidence, and how they can also generate evidence, so that in the future it becomes easier to design evidence-informed youth violence prevention policies and programmes.

A comprehensive approach for preventing youth violence includes interventions at all levels of the ecological model. These should address an array of risk factors – ranging from economic inequality to maltreatment as a child, to hyperactivity and other child mental health problems. Programmes on parenting; early childhood development; school-based life and social skills training; therapeutic approaches; and policies to reduce access to and the harmful use of alcohol have all shown promise in preventing youth violence in high-income countries, and in some low- and middle-income countries. Such programmes therefore provide a good starting point for new efforts to prevent youth violence, and for informing the possible modification of existing youth violence prevention efforts when these are being reviewed.

Several principles for strengthening the implementation of youth violence prevention programmes run throughout this manual, and include the following.

- Policies, plans and programmes should be based on scientific evidence from local and global studies about the magnitude, consequences, causes and preventability of youth violence, and the effectiveness of various strategies.
- Wherever possible, the planning, implementation and monitoring of youth violence prevention programmes should build upon existing public health expertise and infrastructure.
- While an evidence-based approach is necessary for a successful response to youth violence, it is not by itself sufficient. To build a systematic response that will be sustainable and far-reaching, the work of the different sectors, groups and individuals involved must be coordinated.

Significant gains will be made by adopting these principles for a coordinated, systematic approach to youth violence prevention. Rates of youth violence will fall and positive aspects of youth health and social development will be enhanced. As an increasing number of agencies respond to youth violence by adopting the principles outlined in this manual, the evidence base will expand. Scientifically sound information will be at hand to develop policies and programmes and to help resource allocation. An evidence-based approach to youth violence is essential for long-term success in preventing it. Currently, the evidence base is too geographically restricted to high-income countries for decision-makers in low- and middle-income countries to have full confidence in their judgements. Increasing the number of youth violence prevention programmes conducted in an evidence-generating way is therefore vital to ensure that an evidence-based approach will be used in the future.

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