

EUROPEAN REPORT ON  
**PREVENTING  
VIOLENCE AND  
KNIFE CRIME** AND  
AMONG **YOUNG PEOPLE**



## **Abstract**

This report highlights interpersonal violence as the third leading cause of death and a leading cause of disability among people aged 10–29 years in the 53 countries of the WHO European Region. This burden is unequally distributed, and 9 of 10 homicide deaths in the Region occur in low- and middle-income countries. Irrespective of country income, interpersonal violence disproportionately affects young people from deprived sections of society and males, who comprise 4 of 5 homicide deaths. Numerous biological, social, cultural, economic and environmental factors interact to increase young people's risk of being involved in violence and knife-related crime. Factors that can protect against violence developing among young people include good social skills, self-esteem, academic achievement, strong bonds with parents, positive peer groups, good attachment to school, community involvement and access to social support. Good evidence indicates that reducing risk factors and enhancing protective factors will reduce violence among young people. The experience accumulated by several countries in the Region and elsewhere shows that social policy and sustained and systematic approaches that address the underlying causes of violence can make countries in the Region much safer. These make compelling arguments for advocating for increased investment in prevention and for mainstreaming objectives for preventing violence among young people into other areas of health and social policy.

## **Keywords**

ADOLESCENT

VIOLENCE – prevention and control

CRIME – prevention and control

WOUNDS AND INJURIES – prevention and control

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# **European report on preventing violence and knife crime among young people**

## **Editors**

Dinesh Sethi, Karen Hughes, Mark Bellis, Francesco Mitis and Francesca Racioppi

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# ACRONYMS

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<b>CIS</b>	Commonwealth of Independent States
<b>DALY</b>	disability-adjusted life-year
<b>EU</b>	European Union
<b>ICD</b>	International Statistical Classification of Diseases and Related Health Problems
<b>ICD-9</b>	ICD, ninth revision
<b>ICD-9 BTL</b>	ICD-9 basic tabular list
<b>ICD-10</b>	ICD, tenth revision
<b>ISO</b>	International Organization for Standardization
<b>MKD</b>	The former Yugoslav Republic of Macedonia
<b>QALY</b>	quality-adjusted life-year
<b>UN-HABITAT</b>	United Nations Human Settlements Programme
<b>WHO</b>	World Health Organization

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*Dinesh Sethi, Karen Hughes, Mark Bellis, Francesco Mitis and Francesca Racioppi*

# FOREWORD

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*Interpersonal violence among young people occurs in the community, in the streets, in schools, at work, at entertainment venues and in institutions and homes. The consequences are devastating, leading to the loss of 15 000 young lives annually. Interpersonal violence is the third leading cause of death among people aged 10–29 years. Young people who survive must cope with terrible physical and emotional scars. The burden of violence is distributed unequally across the Region, both between and within countries, with deprived populations having a far greater share. The costs to society are enormous, as millions of young people require the services of health, criminal justice, education and social welfare departments every year and may be unable to work and lead productive lives. This report addresses for the first time what has been a growing concern in many countries in the WHO European Region.*

*Interpersonal violence among young people has long been regarded as a criminal justice issue and has only recently been regarded as a public health issue. This report promotes the view that violence among young people is not inevitable – it is preventable, a view championed by the public health approach endorsed in this report. Violence among young people cannot be solely blamed on individuals, as it is a product of biological, social, cultural and economic factors. The root causes of violence are very often governed by socioeconomic determinants, and many arise in childhood.*

*Evidence indicates that organized responses by society can prevent violence among young people. The experience accumulated in several countries in the Region and worldwide show that sustained and systematic approaches that address the underlying causes of violence can make countries safer. This report documents such evidence-informed*

*approaches. These cut across the activity areas of many sectors and require intersectoral coordination. For their part, health systems have a key role to play in providing cost-effective services for young people experiencing violence and in advocating for preventive approaches based on evidence that focus on addressing the root causes of violence.*

*Member States need to join the global effort to reduce a leading cause of premature death among young people and to create safer and more just societies for young people in the Region. WHO hopes that this report will provide policy-makers, practitioners and activists with the facts needed to integrate the agenda for preventing violence among young people both within and outside the health sector.*

Zsuzsanna Jakab  
WHO Regional Director for Europe



# EXECUTIVE SUMMARY

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Many young people die or experience pain and disability from violence throughout the WHO European Region. Interpersonal violence<sup>1</sup> is the third leading cause of death and a leading cause of disability among people aged 10–29 years in the 53 countries of the WHO European Region. This report is intended for policy-makers and practitioners from across the sectors of government as well as nongovernmental organizations and argues that much violence can be prevented using a public health approach.

## Why is preventing violence among young people a priority in the European Region?

Every year about 15 000 young people die from interpersonal violence and about 300 000 are admitted to hospital for severe injuries. Millions more seek help from emergency departments and need the attention of criminal justice, educational and social services. The burden of interpersonal violence is unequally distributed throughout the European Region, and 9 of 10 homicide deaths occur in low- and middle-income countries, in which rates are nearly 7 times higher than in high-income countries. The countries with the highest and the lowest rates in the Region differ by 34 times. In the past 30 years, the European Region has experienced rapid social, political and economic changes associated with unemployment, the loss of social support mechanisms and poor regulatory control.

Irrespective of country income, interpersonal violence disproportionately affects young people from deprived sections of society in all countries

in the Region. Physical violence affects mostly males, who comprise four of five homicide deaths. In addition to physical injury, victims of violence are prone to a variety of behavioural and mental problems ranging from post-traumatic stress disorder to high-risk health behaviour, such as smoking, alcohol and drug misuse and being victims and perpetrators of violence in the future. Further, the costs of violence among young people are very high, not only because of the direct costs of the health, criminal justice, education, occupational and social services that are required but also because of the vast indirect costs of lost productivity and the inability of victims and carers to undertake their activities of daily living. Many countries in the Region have not studied the effects and costs of violence among young people. Such studies are needed to set priorities for preventive services for which there is evidence of cost-effectiveness. Scarce resources needed for care, rehabilitation and incarceration are diverted away from other more constructive societal efforts such as public health, education and welfare. Communities are further weakened by the fear of violence, with erosion of social trust and community networks and further decline in community safety. Deprived communities with high levels of violence are disadvantageously affected, and this further widens inequality in health and raises concerns about social justice.

Overall, about 40% of homicides in the European Region are due to knives and sharp implements, although this varies somewhat in the Region depending on weapon availability. As knives are freely available, knife-carrying is relatively common in many countries (about 5–12% of people carry them), although these are not usually carried with the intent to cause harm. Most young people who report carrying knives say they do so

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<sup>1</sup> Interpersonal violence is the intentional use of physical force or power, threatened or actual, against another person that results in injury, death, psychological harm or maldevelopment.

for self-protection. This implies that tackling the root causes of violence and preventing violent incidents from occurring in the first place are therefore important.

### **Why do young people need special attention to prevent violence?**

Violence among young people occurs between individuals in the streets and in institutions such as schools, residential facilities and in the workplace, and society notices it more than other forms of violence. The mass media and society are quick to demonize violent young people, but this report argues that youth is a period of vulnerability and that the root causes of violence such as abuse and neglect suffered in childhood need to be considered. Childhood and adolescence are periods of neurodevelopmental, cognitive and behavioural change, and exposure to adversity in the form of mental trauma, neglect or violence may result in atypical development and be associated with aggressive behaviour, violence and other health-damaging behaviour. Preventing such adversity and implementing comprehensive intervention programmes in adolescence and early adulthood can help to integrate young people into the mainstream. The links between early childhood adversity and later perpetration or victimization need to be considered in developing a life-course approach to prevention.

### **What are the risk and protective factors?**

Numerous biological, social, cultural, economic and environmental factors interact to increase young people's risk of being involved in violence and knife-related crime. Being a victim of child maltreatment and suffering adverse experiences in childhood increase the risk of being involved in both violence among young people and weapon-carrying in adolescence. Young males have a significantly increased risk of involvement in violence as victims and perpetrators and of using weapons. Exposure to other forms of violence and fear of violence in schools and the community also increases young people's risks. Associating with

violent or delinquent peers is another key risk factor for violence. There are strong relationships between using alcohol and drugs and being involved in violence and weapon-carrying, and having weapons freely available in the community enhances these risks. Community disorganization, low levels of neighbourhood resources and low social capital can be important contributors to violence among young people. Income and social inequality are also strong risk factors for violence because of low social trust and resources. Social and cultural norms that tolerate violence, for example by endorsing violence as a normal method of resolving conflict or for punishing a child, can support and reinforce violence in society.

Protective factors can prevent violence from developing among young people. These include good social skills, self-esteem, academic achievement, strong bonds with parents, positive peer groups, good attachment to school, community involvement and access to social support. Reducing risk factors and strengthening protective factors can prevent violence and weapon-carrying among young people. Strengthening the knowledge base of risk factors using a life-course approach in the European Region should therefore be a key priority to better identify interventions for prevention.

### **What can be done about violence among young people?**

Overall, good evidence indicates that violence among young people can be prevented through the organized efforts of society. Such programmes cut across the activity areas of many sectors and require multiagency and disciplinary work. The evidence base is much stronger for interventions that adopt a public health rather than criminal justice approach and for those that reduce risk factors and strengthen protective factors among young people early in life than for measures that seek to reduce violent behaviour once it has already emerged. However, no programme can entirely prevent violence or the future development of violence among individuals. Thus, interventions

are required in later life, despite the high costs of implementation.

Programmes that target children early in life are cost effective. These include parenting programmes that have long-term effectiveness in preventing violent offending during adolescence and adulthood. Programmes that develop children's life and social skills in early childhood are also effective in both the short and longer term. These early interventions also improve school performance, reduce substance misuse and crime and improve outcomes for employment and health. Such programmes should be implemented widely given the high societal costs of violence and these added benefits to society. These require adaptation for local contexts and can target deprived neighbourhoods with at-risk families. Reducing the availability and misuse of alcohol is important for preventing violence among young people, and good evidence supports various approaches, including setting minimum prices for alcoholic beverages, taxation, regulation and enforcement. Good evidence also supports programmes for preventing bullying for schools, which reduce violent attitudes and behaviour and victimization in schools. Other community settings can also be made safer, such as bars, clubs and other urban nightlife environments, to reduce alcohol-related violence, and community hotspots can be targeted.

Measures also exist that seek to reduce violence among young people who are already engaging in such behaviour, but these are generally less well developed. Some evidence supports intensive treatments such as multisystemic therapy, which involves interventions designed to help parents respond effectively to young people with serious criminal behaviour. Problem-oriented policing and multicomponent programmes that combine social interventions at the community level also report positive results. Legislative measures to address access to knives and knife-carrying are promising and need to be studied further. Much of the evidence is from North America, and more evaluative research is needed in the European Region, including studying the costs and benefits

of measures for preventing violence among young people. Programmes should be implemented with an evaluative framework, and improving the evidence base remains a key priority. Effective prevention requires good information systems to understand the scale of the problem of violence, who it affects, where it occurs, why it arises and whether interventions are effective. This is best addressed not only by collecting more complete data but also by sharing data between the health, criminal justice, education and social welfare sectors.

### **The way forward in the European Region**

This report highlights the enormous scale of the loss to society from violence among young people and the huge potential for prevention by addressing underlying structural determinants, risks and exposure. If all countries in the Region had the same homicide rates among young people as the country with the lowest rate, this would avoid an estimated 9 of 10 homicide deaths. The experience accumulated by several countries in the Region and elsewhere shows that social policy and sustained and systematic approaches that address the underlying causes of violence can make countries in the Region much safer. This makes compelling arguments for advocating increased investment in prevention and for mainstreaming objectives for preventing violence among young people into other areas of health and social policy. The importance of undertaking these steps is of renewed concern given the current economic downturn and reports that unemployment and weakened social welfare programmes are associated with increased violence.

Surveys show that few countries in the Region have devoted adequate resources to preventing violence among young people although it is a public health priority. To improve this inadequate response, this report proposes a set of actions for Member States, international agencies, nongovernmental organizations and other stakeholders. These are in accordance with European Region and global policy initiatives.

**1. Develop and implement national policies and plans for preventing violence among young people that involve other sectors.** Health ministries need to take a leadership role in ensuring that national policies and plans are developed that include preventive approaches and involve other sectors of government, local authorities and other stakeholders.

**2. Take action: implement evidence-based primary prevention.** There is good evidence on the cost-effectiveness of preventive measures, and they urgently need to be implemented. A comprehensive approach should address the root causes of violence through interventions on parenting, life skills, access to alcohol and weapons and modifying settings such as preventing school bullying and making drinking environments safer, while addressing cultural norms and upstream issues such as deprivation and inequality.

**3. Strengthen responses for victims.** Health systems should provide high-quality services for the treatment, support and rehabilitation of victims, addressing both the physical injuries and the mental effects of violence. A holistic approach would involve better coordination between the different sectors.

**4. Build capacity and exchange best practices.** The prevention of violence should be mainstreamed into curricula for health and other professionals. The exchange of best practices needs to be promoted through existing networks such as focal people, practitioners, researchers and nongovernmental organizations.

**5. Improve the collection of data on the causes, effects and costs of violence.** Good data on mortality, morbidity, socioeconomic factors, exposure, outcomes and costs are needed to provide a foundation on which to develop and monitor policies that promote the prevention of violence among young people. Sharing data between the health sector and other sectors is essential to this.

**6. Define priorities for and support research.** More research is needed across the Region on

risk and protective factors using a life-course perspective, on well-designed intervention studies to evaluate preventive interventions and on the implementation of programmes.

**7. Raise awareness and target investment for preventing violence among young people.** Raising awareness about the cost-effectiveness of preventing violence among young people is of paramount importance. The health sector and other sectors and international and national nongovernmental organizations need to advocate for broader government policy leading to nurturing and safer environments in the societal, community and family settings.

**8. Address inequity in violence among young people.** The health sector has a key role to play in advocating for just action across government and can do this by promoting equity in health in all policies and by highlighting violence as a consequence of economic and social policies. By incorporating the prevention of violence in primary care services, the health sector can support community-based programmes and pay special attention to socially disadvantaged people.

# 1. OVERVIEW:

## VIOLENCE AMONG YOUNG PEOPLE IN THE WHO EUROPEAN REGION

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### 1.1 General introduction

Interpersonal violence<sup>2</sup> among young people is a growing concern across the entire WHO European Region because it kills young people prematurely and injures and maims them, often permanently (1,2). The problem affects every society and country. The rates of both fatal and nonfatal violence vary vastly in the 53 countries of the Region. Although this reflects diversity in the Region, the main causes of violence and the underlying socioeconomic determinants are similar. The burden falls disproportionately on young people, especially on men and boys from the most disadvantaged groups and in those countries undergoing the greatest socioeconomic change (3). This unequal distribution of violence threatens to further widen the inequality in health both within and between countries, thus leading to greater inequity in health and social injustice. In contrast, several countries in the Region and worldwide have developed evidence-informed approaches that make them among the safest places in the world. Such countries have invested in options leading to safer societies over many years and show that fatal and nonfatal violence can be reduced through commitment and

sustained efforts by society. These are a resource for the Region and should encourage others that evidence-informed approaches can effectively tackle this cause of premature mortality and harm, thereby reducing inequality in death and disability.

This report has been undertaken in response to increasing concern among policy-makers and the public regarding violence among young people. In particular, there is recent concern among the public that violence among young people has increased; in some countries this has been driven by the marked mass-media attention after killings with knives among young people (4–6).

This report covers people 10–29 years old and focuses on interpersonal violence committed by, to or between young people (1).<sup>3</sup> Such violence is the intentional use of physical force or power, threatened or actual, against another person, that results either in injury, death, mental harm, maldevelopment or deprivation. It may occur between individuals or in small groups and take place on the streets and in other public settings, in the workplace, in institutions such as schools, in residential care facilities and in the home. This report is concerned with preventing violence among young people, with a focus on violence with knives and sharp implements, including glassware, such as the sharp edge of a broken bottle or glass. In the European Region, knives and sharp implements are relatively common weapons in fighting and may lead to serious injuries, often fatal. Preventing

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2 The *World report on violence and health (1)* defines violence as the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that results either in injury, death, psychological harm, maldevelopment or deprivation. Violence may be classified as interpersonal when it occurs between individuals, as self-directed when directed to the self, or as collective violence which occurs between groups and may be politically or economically motivated. Many of the risk factors, however, are cross cutting and there are synergies in the strategies for prevention, whether they address interpersonal, self-directed or collective violence. The current report is only concerned with interpersonal violence in youth.

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3 The *World report on violence and health (1)* defined youth as people 10–29 years old. The term youth violence is used to define interpersonal violence committed by, to or between young people, including adolescents and young adults. The age categories used vary between studies and in how datasets are disaggregated, but this report uses the age group 10–29 years wherever possible.

violence among young people involving sharp weapons therefore requires not only preventing the carrying and use of sharp weapons but also preventing young people from acting violently in the first place (1,5).

The purpose of the report is to emphasize that violence among young people is a leading cause of death and ill health in the Region, to highlight its causes, to promote evidence-based interventions and to call on policy-makers and practitioners for greater action to reduce the burden of disease. The health sector and other sectors such as criminal justice, education and family welfare need to take action. This report therefore targets policy-makers, practitioners and scientists from these sectors and from diverse disciplines such as public health, medicine, nursing, law, policing, social work, teaching and the mass media.

This first chapter examines why violence among young people is a public health priority in the European Region, emphasizes that it can be prevented and provides a rationale for undertaking this report. Chapter 2 focuses on the overall burden of violence, including from knives, describes the prevalence of knife-carrying and sets the scene for the Region. The next chapter examines the risk factors for violence among young people and those for knife-carrying. This is followed by evidence-based programmes in Chapter 4 that describe what can be done both directly to reduce knife-carrying and weapon use and indirectly to prevent violence from occurring in the first place. Chapter 5 describes the policy response globally and in the Region and outlines specific steps in policy-making that need to be taken, with examples of national policies from the Region. It also summarizes the main findings and advocates for policy action with key steps for action.

## 1.2 Why young people need special attention

Youth is a period of progression from childhood to adolescence and maturity associated with cognitive, emotional, physical and behavioural changes (7). The age categories used to define

the different stages may vary between cultures and countries. Nevertheless, early childhood experiences influence the health of young people.

What happens in childhood is critical because of brain growth and the development of cognitive, emotional, social and linguistic skills. Mastering these skills early is essential for later educational, social and economic success and ultimately health (8–10). Factors that prevent mastery of these skills such as poor family functioning and parenting, violence in childhood, poor educational systems, community poverty, drugs and alcohol in the community and social exclusion are all important risk factors for developing violence among young people (1,11–14).

Exposure to violence and mental trauma in childhood is associated with atypical neurodevelopment and subsequent information-processing biases, leading to poor attachment, aggression and violent behaviour (15,16). Children who experience neglect and maltreatment from parents are at greater risk for aggressive and antisocial behaviour and violent offending in later life (13,14). Preventing adversity and providing support in earlier years is therefore one way of preventing the perpetration of violence in adolescence and adulthood (1,17). Further, exposure to adversity in childhood is also associated with greatly increased risks of alcohol and drug misuse, depression, suicide, smoking, risky sexual behaviour, physical inactivity and obesity. These other health effects further strengthen the case for prevention (18).

Adolescence is also a time of marked neurodevelopmental change, and social and cognitive abilities need to develop to negotiate the challenges of adolescence, such as diminished adult supervision, greater peer influence and access to risky activities (15,19). Adolescents face numerous biological, mental and social challenges; in the face of these, a large proportion (up to half) will engage in risk-taking and even life-threatening behaviour (7,20). Whereas most adolescents have the personal, family and community resources necessary to pass this phase

to become healthy, productive adult members of society, a small but significant proportion lack these resources; in the face of adversity, they are much more likely to develop risk behaviour leading to long-term physical and mental ill health and a propensity to become involved in violence. However, comprehensive intervention programmes for at-risk adolescents can help integrate them into the mainstream (7,13,14). Adolescence therefore represents a critical time when damaging behaviour that could become long-term and ingrained into adulthood can be interrupted.

The high mortality from injuries and violence among young people testifies to their vulnerability and requires a coordinated societal response to provide safer communities and environments (1,11,15–17). Overcoming violence therefore requires a life-course approach that addresses challenges at each stage of development (1,17,21–25). This requires emphasizing equity and multisectoral action (26). Interventions need to be adapted to the different stages of childhood development into adulthood and to take local contexts into account.

The links between early childhood adversity and later perpetration or victimization need to be considered in developing evidence-based prevention strategies (13,14). After all, children and young people are any country's most precious resource, and their health is essential for the future success of society (24). Nevertheless, society often emphasizes apprehending young perpetrators rather than addressing the underlying causes that result in violent behaviour. Adolescents and young adults showing aggressive and violent behaviour tend to be demonized, and the early abuse and neglect they suffer is simply ignored (15).

There is a need to invest in and support young people through preventive approaches rather than to simply exclude or incarcerate them, which results in further isolation and social exclusion. Incarceration is very expensive for societies, with the costs often far exceeding the benefits, whereas prevention is cost-effective (27,28).

### 1.3 Why violence among young people is an important public health issue in the European Region

Interpersonal violence ranks as the third leading cause of death in the European Region among people aged 15–29 years after road traffic injuries and suicide (Table 1.1) and accounted for 14 900 deaths in 2004 (29). There are an estimated 20–40 hospital admissions for every death resulting from interpersonal violence, and it ranks as the eighth leading cause of the burden of disease, with 766 000 disability-adjusted life-years (DALYs)<sup>4</sup> lost (1,29). This results in large direct costs borne by the health sector, in addition to those borne by the criminal justice and social sectors. Meeting these costs diverts considerable resources away from more constructive societal spending. In addition, there are huge indirect costs due to lost productivity from violence-related injury and mental trauma. The impact of nonfatal violence among young people is thought to be enormous and has grave long-term physical, mental, economic and social effects resulting in large costs to society (1,30,31). Knives and other sharp implements are commonly available in most countries, are the most commonly used weapon in most countries and are involved in about 40% of homicides among young people in the Region.

Only in the past few decades has interpersonal violence been recognized as a problem that coordinated public health action can prevent (1,13,22). Thinking has increasingly shifted to accepting violence as a societal problem that can be prevented through evidence-based action. To date, much of the societal response has been protecting people from violence through a criminal justice response. The health sector can play a central role in this new approach by documenting the burden, distilling the evidence of what works, setting priorities for action and engaging with other sectors in partnerships to develop prevention plans (1,17,32).

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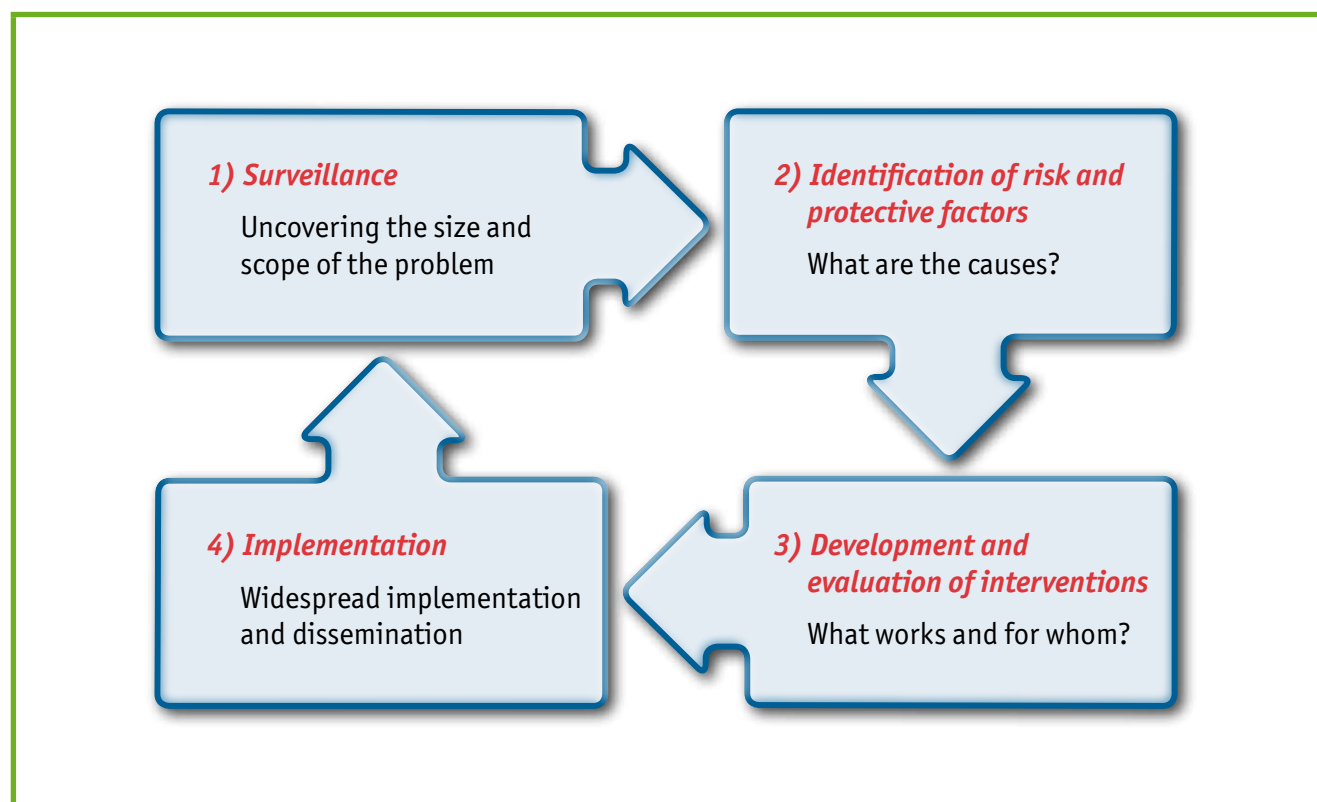
<sup>4</sup> One DALY is one year of life lost to premature death or lived with disability (29).

Table 1.1. Leading causes of deaths among people 5–14 and 15–29 years old in the European Region

Rank	5–14 years		15–29 years	
	Causes	Number of deaths	Causes	Number of deaths
1	Road traffic injuries	4 185	Road traffic injuries	39 278
2	Drowning	2 432	Self-directed violence	29 548
3	Lower respiratory infections	1 931	<b>Interpersonal violence</b>	<b>14 899</b>
4	Leukaemia	1 680	Poisoning	14 066
5	Congenital anomalies	1 390	HIV/AIDS	7 009
6	Self-directed violence	1 288	Tuberculosis	6 696
7	Lymphoma, multiple myeloma	701	Drowning	6 568
8	Epilepsy	649	Ischaemic heart disease	4 615
9	<b>Interpersonal violence</b>	<b>638</b>	Cerebrovascular disease	4 384
10	Cerebrovascular disease	594	Leukaemia	4 252

Source: *The global burden of disease: 2004 update* (29).

Fig. 1.1. A public health approach to preventing violence



Source: *Preventing injuries and violence: a guide for ministries of health* (32).



Successful preventive responses to violence involve a public health approach. This takes account of the size of the problem, the risk factors and the evidence base of what works and then implementing these on a wider scale (Fig. 1.1) (32). The public health approach is complementary to the criminal justice approach, which focuses on reacting to and controlling violence by combining intervention at incidents, incarceration and deterrence (33). This report promotes the public health approach to preventing violence using evidence-informed and population-based interventions.

#### 1.4 Inequality in violence among young people in the European Region

The Region has great diversity and has also changed rapidly. The material and social stresses associated with globalization are being felt in many countries. Inequality in health is increasing among the most vulnerable population groups (10). Low- and middle-income countries in the Region have undergone the most rapid changes politically, with the transition to market economies. High unemployment, rising income inequality, loss of social support networks and high alcohol consumption levels resulted in an increase in homicide among young people in the early 1990s (3,34–36). Although the trend has been downward since then, homicide rates among people aged 15–29 years from countries in the Commonwealth of Independent States<sup>5</sup> (CIS) still remain about 13 times higher than that in the European Union (EU) (Fig. 1.2). Even in high-income countries, both fatal and nonfatal interpersonal violence rates are several times higher in the most deprived segments of society than the most affluent ones (37–39). This emphasizes that violence among young people is a public health concern throughout the Region (3). Young people from disadvantaged sections of society often live in inner-city areas that may have concentrations of poverty and social disorganization, and this may be chronic. The death or disability of young people from violence in poor

communities hinders the development of these communities because of the loss from the workforce both of victims and incarcerated perpetrators (40). The link between poverty, income inequality and the occurrence of interpersonal violence among young people is important for all countries of the European Region, and addressing this is a matter of social justice.

In the European Region, the social determinants of violence are a particular concern given the economic downturn starting in 2008 and the resulting high unemployment rates among young people and the loss of social support networks (41). There is renewed concern that the recession will increase mortality from homicide and suicide. Estimates based on past mortality and unemployment patterns suggest that every 1% increase in unemployment in the EU countries is associated with a 0.8% increase in homicide and suicide rates for all ages taken together. The effects seem to be worse in countries with less social protection and without active labour market programmes (41). Areas with chronic poverty are most severely affected. Investing in cost-effective preventive services should be emphasized to governments, especially in times of economic hardship, given the very high costs of incarceration (27,28).

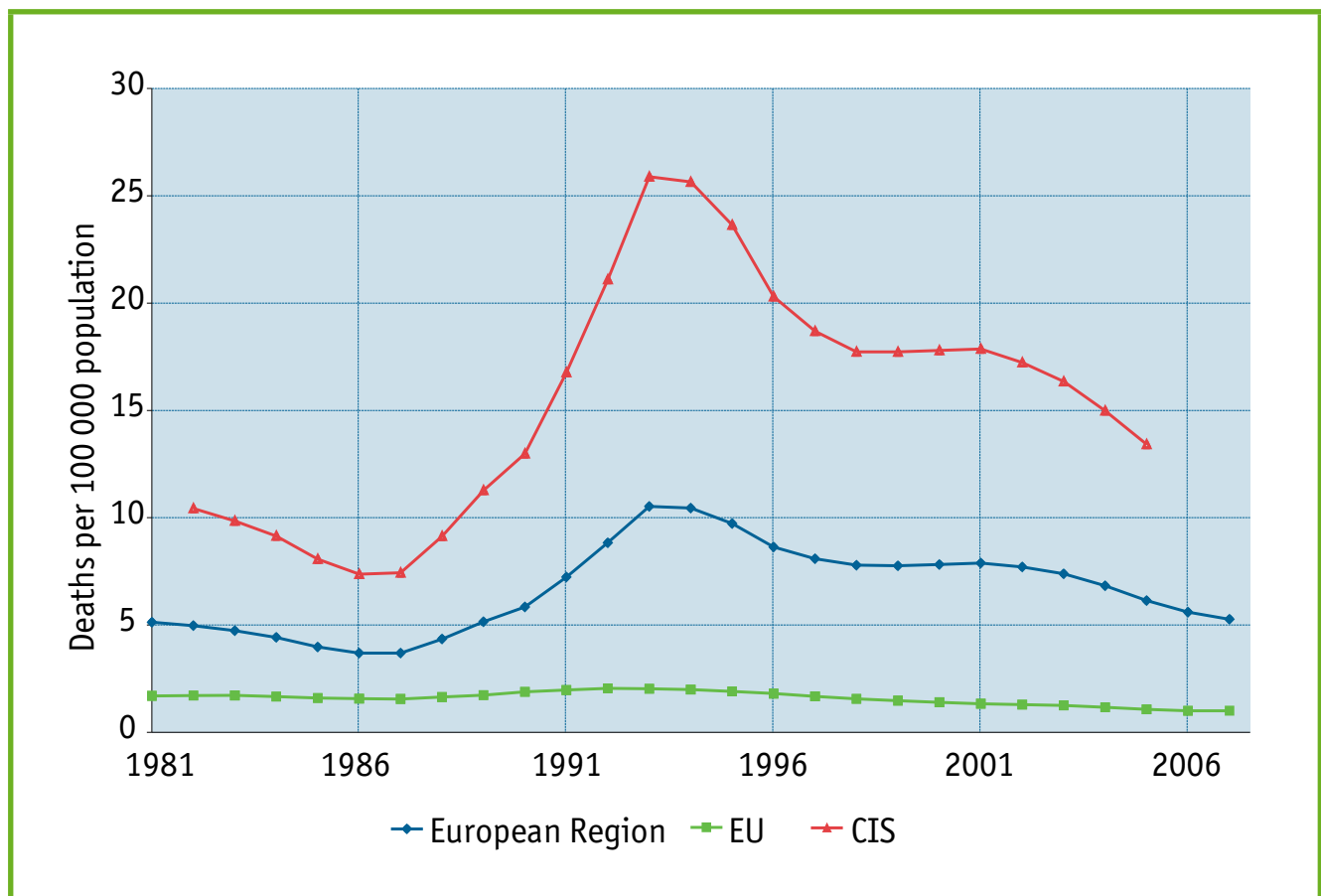
There is a marked preponderance of males dying from homicide over females dying from homicide and a similar pattern for hospitalization, fighting and bullying (1). Young females, in contrast, are more likely to be victims of sexual violence. This report focuses on violence and knife-related crime among young people and does not therefore focus on gender-based violence such as sexual violence. Other WHO publications are devoted to preventing intimate partner and sexual violence and providing care for victims (1,42,43).

#### 1.5 Overcoming the problem of violence among young people

Violent incidents among young people are too often seen as an inevitable part of human life: events that are responded to rather than prevented.

5 The CIS consisted of Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, the Republic of Moldova, the Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan when the data were collected.

Fig. 1.2. Standardized mortality rates for interpersonal violence among young people 15–29 years old in the WHO European Region, EU countries and CIS countries, 1981–2007



Source: Mortality indicators by 67 causes of death, age and sex (HFA-MDB) [online database] (44).

Current thinking challenges this notion and shows that much violence can be predicted and is a preventable health problem (1). Violence results from a complex interaction among many factors at the individual, relationship, community and societal levels. The *World report on violence and health* (1) proposed an ecological model (Annex 1) to understand risk factors and implement preventive programmes, and subsequent chapters of this report use this model.

Many countries have invested in safety as a corporate responsibility involving various sectors to deliver safe physical and social environments, and acknowledgement is increasing that a life-course approach is needed to prevent interpersonal violence (1,17,25,31). Implementing evidence-based approaches would save many thousands of young people’s lives in the long term in the

Region as well as the pain and suffering of nonfatal violence.

### 1.6 Global and European Region policy dimensions of preventing violence among young people

World Health Assembly resolution WHA49.25 on the prevention of violence: a public health priority and resolution WHA56.24 on implementing the recommendations of the *World report on violence and health* called on Member States to give priority to preventing violence among young people (45,46). The WHO Regional Committee for Europe adopted resolution RC55/R9 on the prevention of injuries (47), and the Council of the European Union has passed a recommendation on preventing injuries and the promotion of safety that singles

out young people as one of the groups requiring attention (48). These call on the health sector to take the lead in coordinating a multisectoral response to preventing violence. Conventions and charters adopted by Member States in the Region are based on the principles of equity, solidarity and protecting the rights of children and citizens. The Tallinn Charter: Health Systems for Health and Wealth (49) underpins that health systems have a central role in promoting equity, calling for greater attention to the needs of the poor and vulnerable population groups. The United Nations Convention on the Rights of the Child (50) underlines the social responsibility to protect people younger than 18 years and to provide them with appropriate support and services and supports their right to a safe environment free from violence. The report of the Commission on Social Determinants of Health emphasizes that the unequal distribution of power, income, goods and services leads to inequity in health within and between countries (10,51,52). Many of the risk factors of violence are linked to these structural determinants and conditions of daily living in societies. These unequal opportunities and exposure manifest in great inequality in violence among young people between and within countries. Unsafe neighbourhoods, high unemployment, a high density of bars, the presence of a drug trade, lack of social networks and poor access to education and health services predispose young people to experiencing interpersonal violence (17). This report strongly makes the case for tackling these social determinants of health early in childhood as part of implementing programmes to prevent violence. This underpins the importance of the life-course approach and emphasizes the need to start early in childhood (10,25).

United Nations General Assembly Resolution A/RES/64/134, recognizing the special needs of young people, declared the International Year of Youth from 12 August 2010. This encourages advancing the full and effective participation of young people in all aspects of society and promotes a theme of dialogue and mutual understanding (53). This presents an opportunity for all sectors to engage with young people in addressing one of their key concerns.

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## 2. THE SCALE OF THE PROBLEM

### 2.1 Introduction

This chapter uses various data sources to describe the burden of interpersonal violence among young people and show that this is a leading cause of death, disability and economic loss to society. Whereas data on deaths are the most reliable and complete, other sources of data are less complete and depend on interpersonal violence being reported to the police or coming to the attention of the health sector. As many as 50% of assaults presenting to hospital are not reported to the police (1,2). Population surveys asking people whether they have been victims or perpetrators offer a more complete data set, although these may be influenced by responder bias and survey methods (3). The chapter also examines information on knife-carrying.

### 2.2 Deaths from interpersonal violence

Injuries and violence are the leading causes of death among young people (Table 1.1). Among people 15–29<sup>6</sup> years old, interpersonal violence is the third leading cause of death after road traffic injuries and self-directed violence and is responsible for 11% of all injury deaths (Fig. 2.1) (4).

### 2.3 The burden of interpersonal violence deaths among young people in the European Region

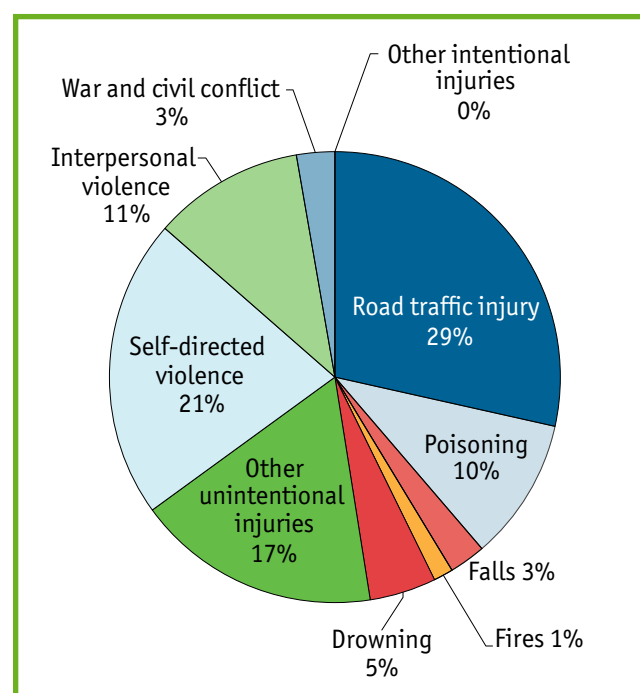
Interpersonal violence kills 14 900 young people aged 15–29 years annually in the WHO European Region, and men comprise 79% of these deaths. Homicide rates in the European Region are higher among males than females at all ages except in very old people (Fig. 2.2). The rates are highest

6 The *Global burden of disease: 2004 update* (4) presents data for people 15–29 years old. These data are presented here even though the main focus of this report is people aged 10–29 years.

#### Key Facts

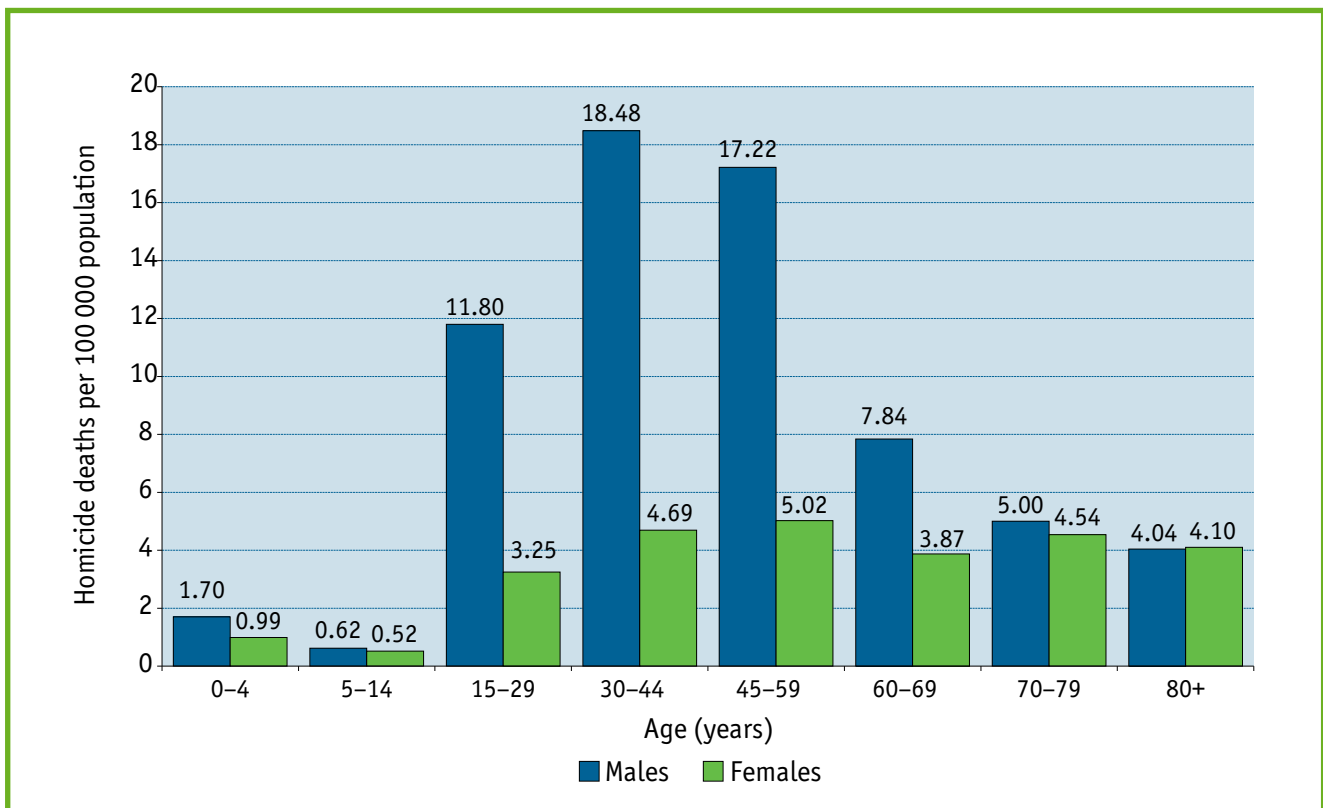
- Interpersonal violence is the third leading cause of death in the European Region among people aged 10–29 years and leads to the loss of 15 000 lives annually.
- Homicide rates in low- and middle-income countries in the Region are nearly seven times higher than in high-income countries, and there is an east-west gradient in the Region.
- The countries with the highest and the lowest rates differ by 34-fold.
- Four of five homicide victims are male.
- About 40% of the homicides are due to knives and sharp implements.
- Violence among young people has great economic costs.

Fig. 2.1. Causes of injury death among young people aged 15–29 years in the WHO European Region



Source: *The global burden of disease: 2004 update* (4).

**Fig. 2.2. Age-specific homicide rates in the WHO European Region**



Source: *The global burden of disease: 2004 update (4)*.

among males aged 30–44 years, followed by those 45–59 years old and then among those aged 15–29 years. The mortality from interpersonal violence per 100 000 people aged 15–29 years is 7.6 (11.8 among men and 3.3 among women) (Table 2.1). Evidence suggests that the rates of nonfatal violence in many countries are highest among people aged 15–29 years (Table 2.2 and Annex 1).

## 2.4 Inequality in the European Region

The burden of interpersonal violence deaths among people aged 15–29 years is highest in the low- and middle-income countries of the Region: 13 600 deaths (92%) occur there annually. There is a large gradient between high-income countries and low- and middle-income countries: homicide rates are 6.9 times higher (7.7 times higher for men and 5.0 times higher for women) (Table 2.1). The mortality rate ratio among males versus females is 3.6 in the Region as a whole, but in low- and middle-income countries this is 3.8 and in high-income countries it is 2.5.

There is a divide in homicide rates between east and west: the lowest rates are in some western European countries such as Germany and the United Kingdom, and the highest rates are in countries in the eastern part of the European Region (Fig. 2.3). In the EU, the Baltic countries have the highest rates.

There is a 34-fold difference between the country with the highest homicide rate (Russian Federation, 16 per 100 000 population) and that with the lowest (Germany, 0.5 per 100 000 population) (Fig. 2.4).

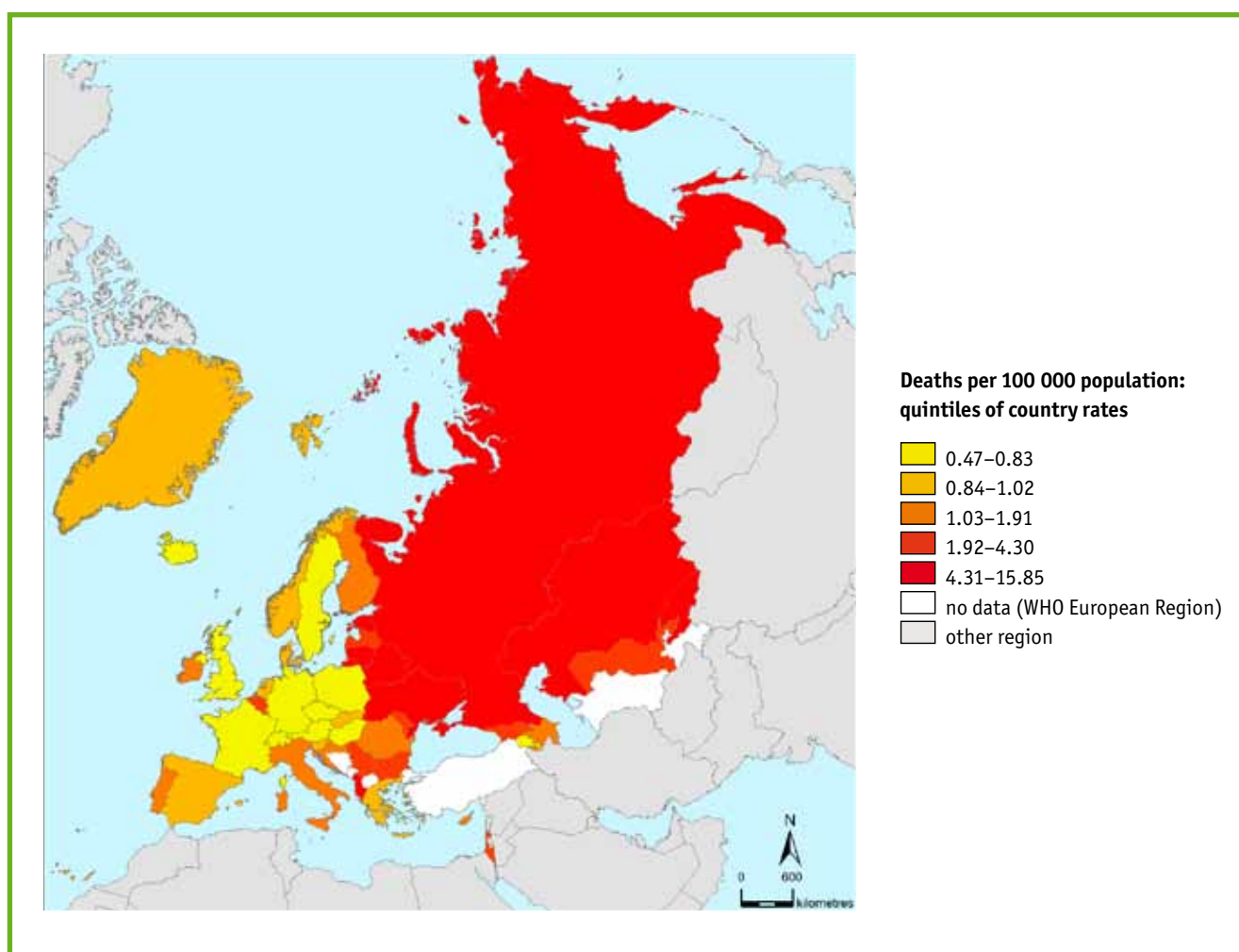


**Table 2.1. Homicide rates per 100 000 population among people aged 15–29 years by country income categories for 2004**

Countries and rate ratio	Males	Females	Both sexes	Rate ratio M/F
Low- and middle-income countries	17.88	4.71	11.37	3.80
High-income countries	2.33	0.95	1.65	2.46
<b>All countries</b>	11.80	3.25	7.59	3.63
Rate ratio between low- and middle-income countries and high-income countries	7.66	4.96	6.88	

Source: *The global burden of disease: 2004 update* (4).

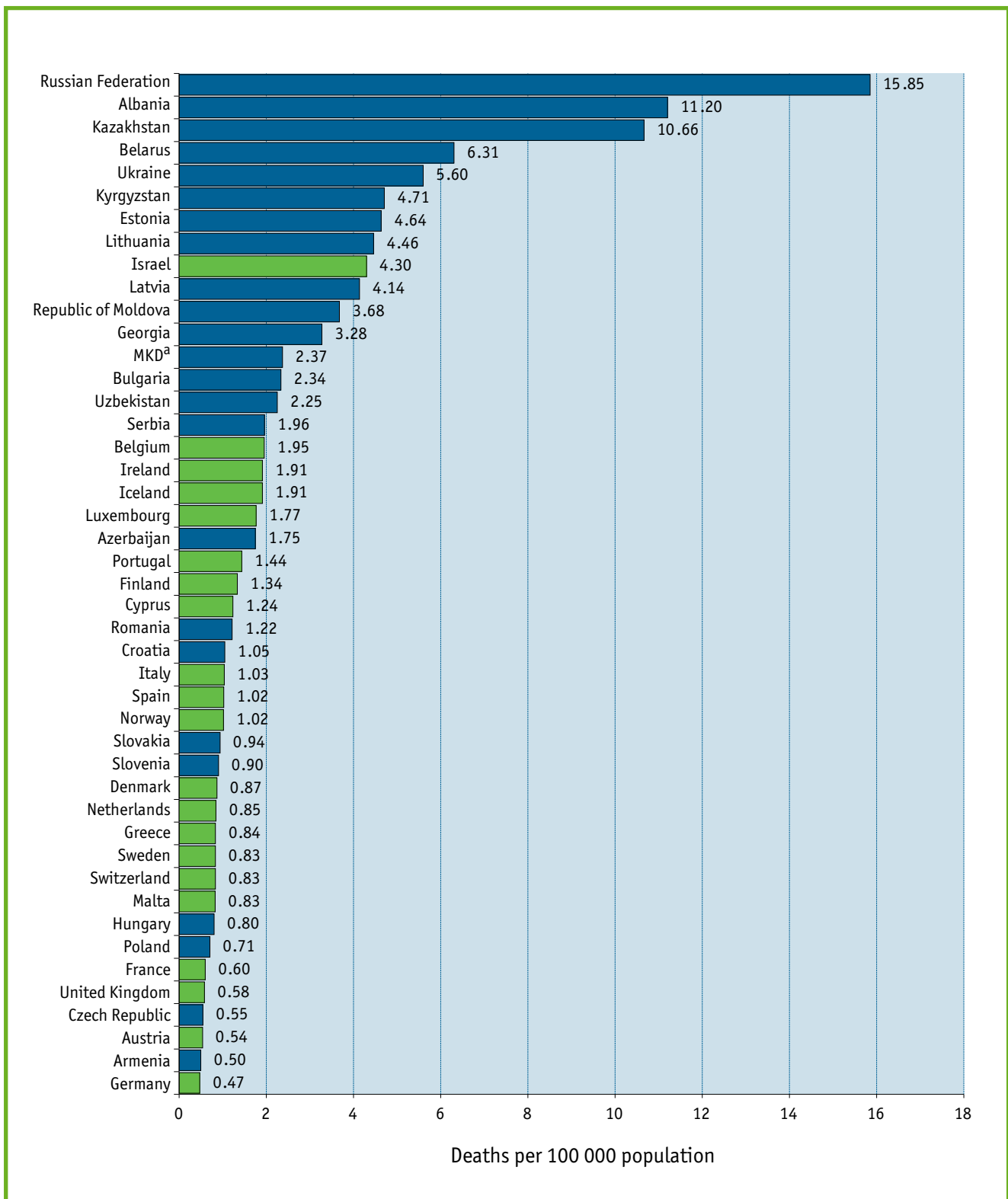
**Fig. 2.3. Quintiles for selected countries' age-standardized mortality rates among people aged 10–29 years from all causes of homicide, WHO European Region, 2006**



Source: Mortality indicators by 67 causes of death, age and sex (HFA-MDB) [online database] (5).



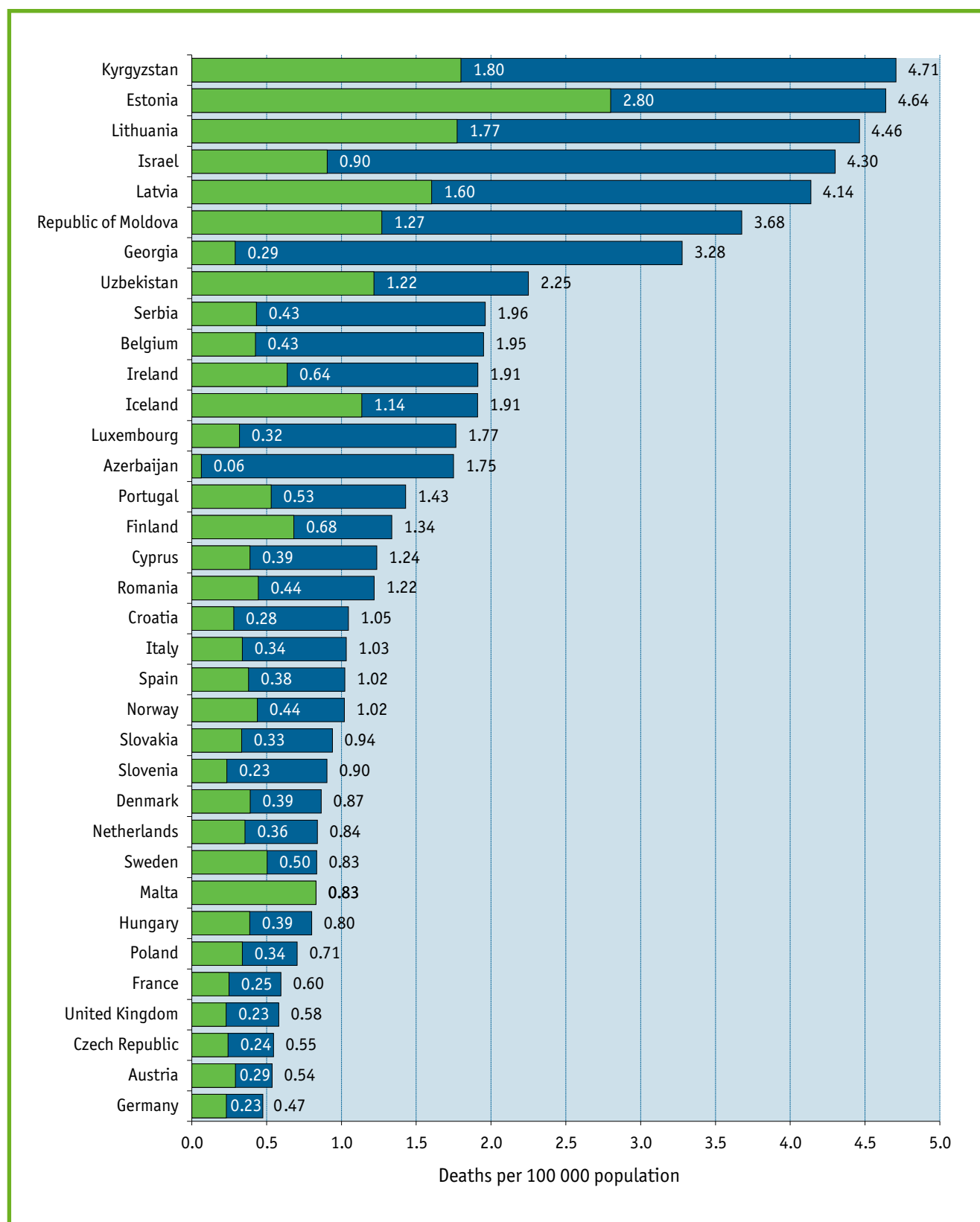
**Fig. 2.4. Age-standardized mortality rates for all causes of homicide among people aged 10–29 years in selected countries in the WHO European Region, 2004–2006 or latest available three years by country income**



Source: Mortality indicators by 67 causes of death, age and sex (HFA-MDB) [online database] (5).

<sup>a</sup> The International Organization for Standardization acronym for the former Yugoslav Republic of Macedonia is used in figures in this publication.

**Fig. 2.5. Age-standardized mortality rates (SMR) among people aged 10–29 years for all causes of homicide and from sharp implements, selected counties in the WHO European Region, 2004–2006 or latest three years available**



Source: European detailed mortality database (DMDB) [online database] (6).

## 2.5 Homicide using knives and sharp implements in the European Region among people aged 10–29 years

The 35 countries of the European Region for which data are available on the mode of death in homicide<sup>7</sup> vary greatly in mortality rates from stabbings with knives and other sharp implements. The countries with the highest knife and sharp implement homicide rates are Kyrgyzstan, Estonia, and Lithuania; those with the lowest knife homicide rates are Azerbaijan, Germany, Slovenia and the United Kingdom (Fig. 2.5). Annex 1 shows these rates separately for males and females.

Such countries as Estonia, Malta and Sweden have the highest proportion of homicides among young people committed with knives and sharp implements at 60% or more, whereas in such countries such as Azerbaijan, Georgia, Israel and Luxembourg this is about 20% or lower, and other means such as guns are used to commit homicide (see Annex 1 for type of weapon use).

In Finland, an analysis of the Finnish National Homicide Monitoring Database between 2002 and 2008 shows that 42% of homicide victims aged 10–29 years were killed with a sharp implement and 19% with a firearm; 67% of the young homicide victims were male (personal communication, Martti Lehti, Finnish National Research Institute of Legal Policy, Helsinki, 2010) (7). These figures are similar to those reported previously (8,9). Between 1998 and 2008, 18% of homicide victims were aged 10–29 years in Finland. The annual proportion of victims aged 10–29 years old varied from 11% to 25%, being higher in 2007 and 2008 due to two school shootings. The rate of homicide in this age group was 1.7 per 100 000, while for those aged 30 years and older the death rate was almost twice as high (3.0 per 100 000). Within the younger age group, the rate among people aged 20–29 years is higher than among those aged 10–19 years.

Specific data on homicide by cause are not routinely available in the Russian Federation. However, a

study that examined mortality data and homicide statistics showed that about 42% of homicides occurred among people 14–29 years old, and although the data were not disaggregated by age they were by cause of death. Stabbing was a cause of death in 38% of homicides, followed by being hit with a blunt object 21%, strangulation 20% and gunshots 10%. The study reports an increase in homicide rates between 1990 and 1997, with a particularly marked increase in rates among young people (10). The proportion of murders involving a group of perpetrators increased as did the proportion involving strangulation and being hit with blunt objects; stabbing fell from 59% in 1989–1991 to 38% in 1998.

## 2.6 Hospitalization and emergency department visits

Estimates suggest that, for every young person dying, about 20 are admitted to hospital (11). Based on this, more than 300 000 young people are admitted to hospital annually due to interpersonal violence, and millions more seek help and support from health, justice, social, occupational and educational services. Hospitalization data are available but are only complete and reliable for five countries (12) (Table 2.2). These show that hospital admissions for assault with sharp weapons range from 6.9 per 100 000 in Finland to 0.9 per 100 000 in the United Kingdom. The proportion of hospital admissions due to assault with a sharp implement as a proportion of all assaults among young people is 23% in Finland, 11% in the United Kingdom, 8% in Croatia and 3% in the Czech Republic and Slovenia, averaging 8%. A study from England reports that assault is the second leading cause of hospital admission among men aged 15–24 years (13).

Data are also available on emergency department attendance for selected hospitals from several countries. Information provided by the EU injury database from several countries shows considerable variation in emergency department

<sup>7</sup> Data are not available for assaults and homicides using knives and sharp weapons (ICD-10 code E966–X99) for 18 countries, which have therefore been excluded. See Annex 2.

**Table 2.2. Hospitalization numbers and rates per 100 000 population for assaults using knives and sharp implements among people aged 10–29 years for selected countries in the WHO European Region, average 2004–2006**

Countries	All injuries	All assault	Assault with sharp implements		Sharp assault as a proportion of all assault (%)
	n	n	n	Rate per 100 000	
Croatia	10 425	203	17	1.51	8.37
Czech Republic	46 113	1 998	62	2.26	3.10
Finland	11 853	397	90	6.85	22.67
Slovenia	5 160	239	7	1.43	2.93
United Kingdom	11 329	1 353	146	0.94	10.79
<b>Total</b>	<b>84 880</b>	<b>4 190</b>	<b>322</b>	<b>–</b>	<b>7.69</b>

Source: European hospital morbidity database [online database] (12).  
Data are for admissions excluding day cases.

**Table 2.3. Emergency department attendance among people aged 10–29 years for injuries and assaults with sharp implements at selected hospitals in nine countries in the WHO European Region, average for 2005–2008**

Countries	All injuries		Assaults	Assault by sharp implements		
	Number of cases	Attendance rate (per 1000 population)	Assault as proportion of all injuries	Proportion of all assaults	Attendance rate (per 100 000 population)	Percentage of victims who are male
Austria	6 625	143	1.6%	7.7%	20	88%
Cyprus	4 582	–	2.6%	3.4%	–	75%
Denmark	31 369	167	6.7%	7.8%	90	84%
Germany	1 679	84	9.9%	2.4%	20	50%
Latvia	43 549	191	12.2%	3.5%	80	87%
Malta	1 697	75	1.7%	3.4%	1	100%
Netherlands	111 989	80	4.7%	13.8%	50	83%
Slovenia	20 269	131	3.4%	3.9%	20	100%
Sweden	36 002	110	5.4%	5.4%	30	89%
<b>Total</b>	<b>257 761</b>	<b>127</b>	<b>6.1%</b>	<b>7.8%</b>	<b>60</b>	<b>85%</b>

Source: EU injury database [online database] (14).

attendance (14). An overview of this information shows that, for the available countries, assault with sharp implements constitutes about 8% of all injury attendance at emergency departments, and the average attendance rate was around 60 per 100 000 population (Table 2.3).

## 2.7 Weapon-carrying and violence

Weapon-carrying among young people is associated with increased involvement in physical fighting and a greater likelihood of being seriously injured among those who do fight (15). Carrying a weapon

may give young people the courage to go to places that they may otherwise avoid or embolden them to fight. Knives are freely available, and restricting ownership and carrying of knives is more difficult than restricting firearms. Further, glassware can also be used opportunistically for assault, especially in drinking and/or entertainment settings.

People carry weapons for four main reasons. These include to increase their capacity to cause harm; because of fear of violence; to facilitate robbery; and for self-image or machismo (16–18). The availability of weapons and the act of carrying them are risk factors for violence. For example, the availability of firearms is a major determinant of their use and homicide rates (11,19,20).



The Health Behaviour in School-aged Children survey<sup>8</sup> in 2001/2002 showed in selected countries that the prevalence of weapon-carrying in the past 30 days among schoolchildren aged 11–15 years can be quite high. The carrying of any weapon among boys ranged from 10.5% in Belgium to

8 The Health Behaviour in School-aged Children survey was undertaken in 35 countries and regions: Austria, Belgium, Canada, Croatia, Czech Republic, Denmark, England, Estonia, Finland, France, Germany, Greece, Greenland, Hungary, Ireland, Israel, Italy, Latvia, Lithuania, Malta, Netherlands, Norway, Poland, Portugal, Russian Federation, Scotland, Slovakia, Slovenia, Spain, Sweden, Switzerland, the former Yugoslav Republic of Macedonia, Ukraine, United States of America and Wales. Of these, 33 are in the WHO European Region, although the means presented also include Canada and the United States of America.

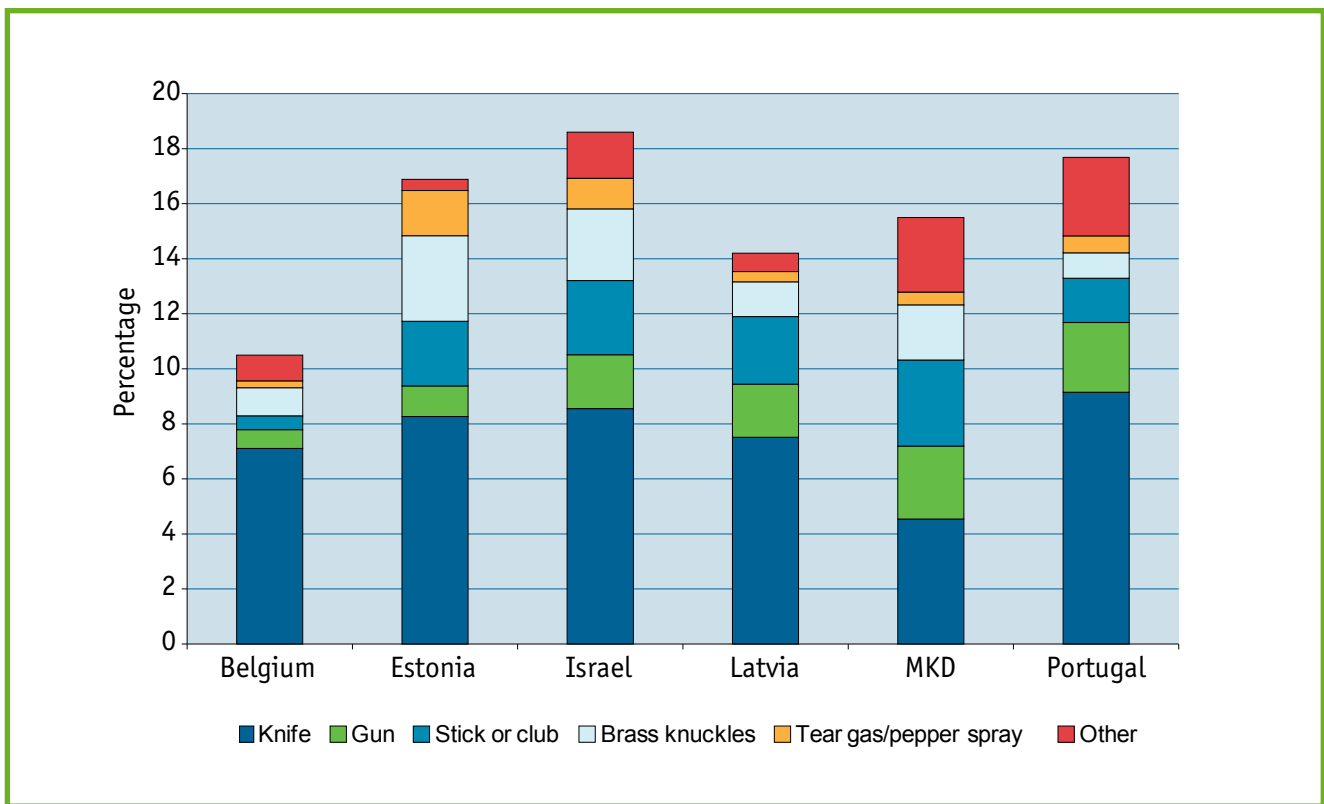
18.6% in Israel and was lower among girls, ranging from 2.3% in Portugal to 3.4% in Israel (21). The most common type of weapon carried is a knife or pocket knife (Fig. 2.6). The former Yugoslav Republic of Macedonia had the lowest prevalence of knife-carrying (4.5%) and Portugal the highest (9.2%). Similar results were found in the 2007 International Self-report Delinquency Study covering 10 countries in the European Region and one outside the Region (22) in which the prevalence of weapon-carrying among school-aged children aged 12–16 years ranged from 2.8% in Cyprus to 13.9% in Ireland (Annex 1). The weapon chosen may vary substantially within countries: for example, in the United Kingdom, guns in Manchester but knives in London and Glasgow.

A study of school attendees 16–20 years old in Switzerland showed weapon-carrying among 20% of men and 6% of women, with knives being 11.5% and 1.5% respectively (24). Of those who carry a knife, 8% of men and 4% of women reported using the knife in a fight. In a survey of people 10–25 years old in England and Wales, 3% reported carrying a knife, and of these, 85% said they do so for protection (20). Another survey in England and Wales shows that about 30% of the people in mainstream education admit carrying a knife in the past year versus about 50% among people outside mainstream education. This ranged from kitchen knives (4%) to penknives (17%), which may be for nonviolent purposes (25). In Scotland, which has a high prevalence of knife-carrying, homicide using knives increased by 163% between 1981 and 2003, and half the homicides among males are due to knives (26). Surveys of people aged 11–16 years found that 19% of boys and 6% of girls reported carrying a knife in 1996–1998 (27). In Turkey, 16% of boy students and 4% of girl students 14–17 years old reported being threatened or assaulted with a knife in the past year (28). Glassware is also used in fighting, and reports suggest that this can be quite common, particularly given the easy access in nightlife entertainment settings (19,20,29,30).

## 2.8 What surveys in the European Region show

The European Survey of Crime and Safety reports that 7% of the people in the EU were victims of

**Fig. 2.6. Prevalence of weapon-carrying among boys aged 11–15 years in the past 30 days by type of weapon in six countries in the WHO European Region, 2001/2002**



Sources: Pickett et al. (21) and Currie et al. (23).

violent crime (including robbery, sexual violence and assault) from 2000 to 2005. Of these, a knife was used in 7% of violent crimes, ranging from 1.6% in Finland to 12% in the United Kingdom and 18% in Spain (31,32). These data are not available by age group.

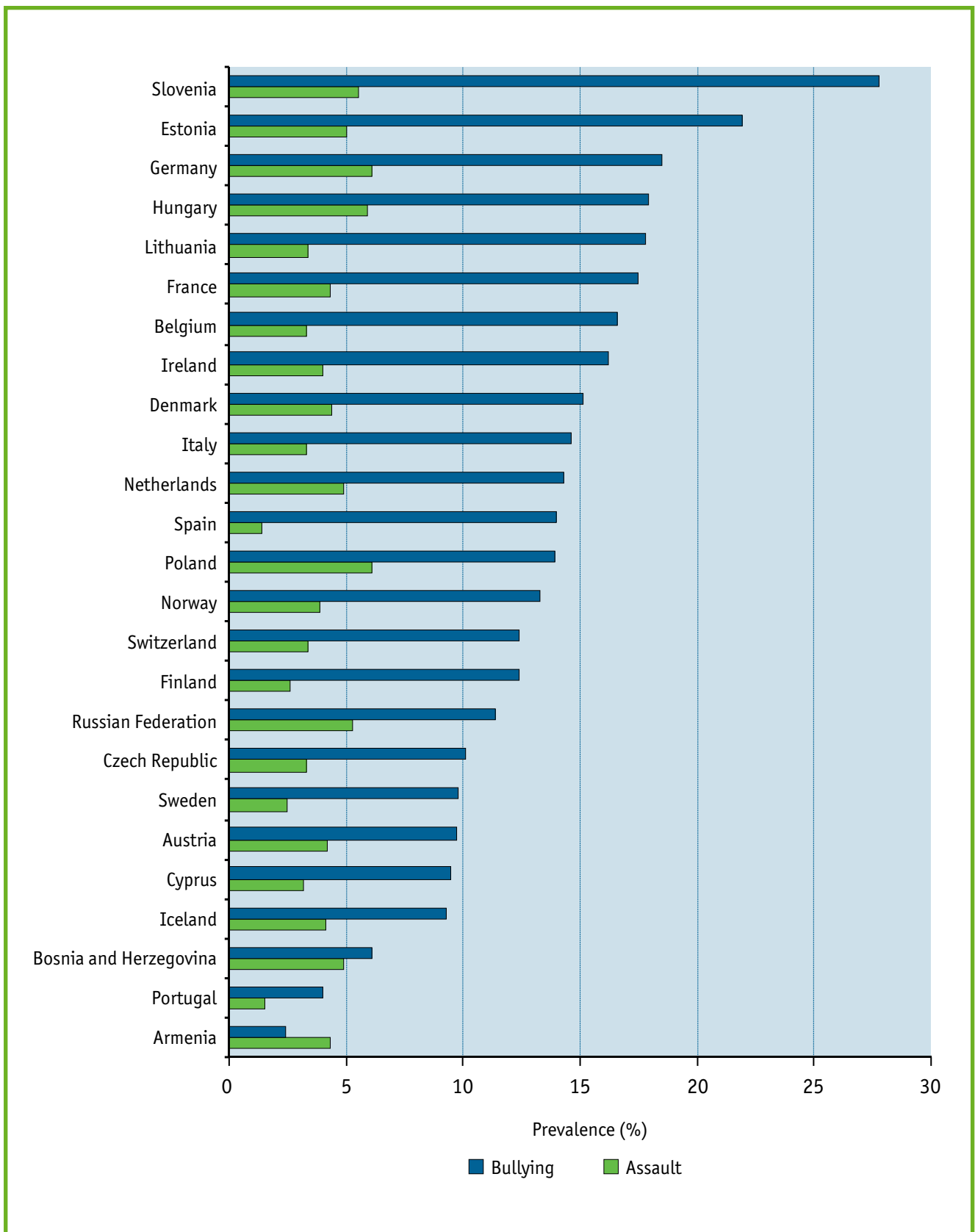
Focusing on schoolchildren 12–16 years old (in both vocational and academic schools), the International Self-report Delinquency Study 2006–2007 in Europe reported on the percentage of young people who have been victimized in the past 12 months (Fig. 2.7). In the 25 participating countries from the European Region, bullying others was reported as common, ranging from a prevalence of 2.4% in Armenia to 27.8% in Slovenia. Assault resulting in injuries requiring health care was less common, ranging from 1.4% in Spain to 6.1% in Poland (22).

In addition, the Health Behaviour in School-aged Children survey in 2001/2002 reported that 39%

of schoolchildren 11–15 years old reported being involved in at least one physical fight in the past year (23); 10% (range 4–21%) reported more frequent physical fighting of three or more times in the previous year. Thirty-five per cent of the respondents reported bullying others at least once a month, and 11% reported bullying others at least twice in the previous month. Thirty-four per cent of the respondents reported being a victim of bullying at least once in the previous couple of months, and 11% reported being bullied at least twice in the past two months. Similar to fighting, boys had a higher prevalence of being a victim or perpetrator of bullying than girls. Whereas fighting decreased with age, the prevalence of bullying others increased with age and being bullied decreased with age. All three forms varied across countries.

The Health Behaviour in School-aged Children survey shows that about one third of respondents are not involved in any form of violence, about one tenth are involved in both fighting and bullying

**Fig. 2.7. Prevalence of being a victim of bullying or assault in the past 12 months among people aged 12–16 years in selected countries in the WHO European Region, 2006–2007**



Source: Junger-Tas et al. (22), Pickett et al. (21) and Currie et al. (23).

and one seventh in fighting only. One quarter are involved in all three forms, either as victims, fighters or bullies.

## 2.9 National reporting on interpersonal violence among young people

Many countries conduct population-based surveys with representative samples. These have the advantage of collecting self-reported data on being victims or perpetrators of violence, although comparisons between countries need to be treated with caution in view of different methods (3). This section presents some country examples.

Sweden undertakes periodic crime surveys. In a representative sample of 15-year-olds, about 6% reported having perpetrated violence on someone else – hitting, kicking etc. so that they required health care, and about 2% reported doing this with a weapon (33) (Fig. 2.8). About 10% reported carrying knives. Six per cent reported being a victim of violence requiring health care and 2% being injured with a weapon. Eleven per cent of men and 4% of women aged 16–24 years reported having been victims of assault (34).

In England and Wales, the British Crime Survey is conducted annually among people aged 16 years and older. In 2009/2010, 13% of men and 4% of women aged 16–24 years reported having been the victim of a violent crime (including robbery) in the past 12 months (35). A weapon was used in 19% of violent assaults, and the most commonly reported weapons were a knife (5%), glassware (4%) and a hitting implement (4%). Experimental British Crime Survey data for 10- to 15-year-olds in 2009 suggested that between 2.3% and 7.8% reported violence that resulted in injury in the past 12 months (36). The median age of knife victims identified through the main British Crime Survey has decreased since 2004/2005. Homicides among people younger than 20 years increased markedly between 2004/2005 and 2007/2008 and then declined slightly in 2008/2009 (Fig. 2.9).

Hospital admission data for England show that admissions for assault by a knife or sharp weapon

increased by 34% among all ages between 2002/2003 and 2006/2007, although they declined by 14% by 2008/2009. Admissions for stabbing also increased among young people between 2002/2003 and 2006/2007, by 50% among those aged 13–19 years, although between 2006/2007 and 2008/2009 admissions across all age groups decreased (unpublished Hospital Episode Statistics, routine analysis from Home Office, London, 2010).

About 14% of the assaults that required hospital admission in England between 2002 and 2006 were due to sharp objects, with other cases such as blunt weapons and guns being less frequent (9% and 0.13% respectively). The vast majority (90%) of assault admissions were male, and people from more deprived neighbourhoods were much more likely to be admitted than those from the least deprived, as were people aged 15–29 years (37). In another study, almost two thirds of hospitalized victims of assault with a sharp object who died had suffered injuries to the head, neck and chest (38).

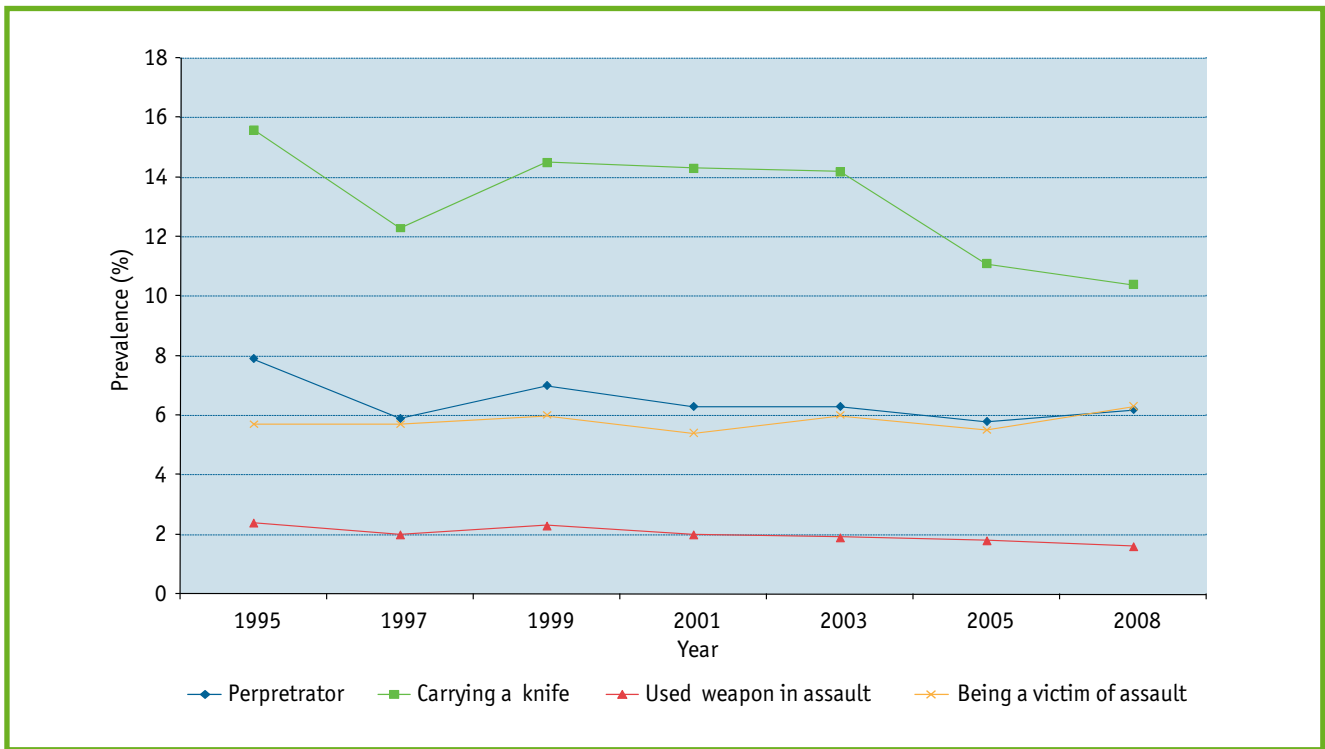
In Scotland, which has one of the higher mortality rates in the Region, homicide using knives and sharp implements rose 164% between 1982 and 2002 versus an increase of 83% for general homicide rates during this period (26). This steeper rise in homicide using sharp weapons has continued, and young people from the most deprived backgrounds are the most vulnerable (39).

Trend data from official police crime statistics provide information about recorded crime in Germany (41) and show that the rates for both less severe and more severe assaults (defined as acts committed by more than one person and/or use of weapons) appear to be rising, especially among young people 14–24 years old (Fig. 2.10).

In a representative survey of 44 610 students aged 13–20 years (average age 15.3 years) (42,43), 19% reported having committed at least one less severe assault (defined as the respondent alone inflicting an injury without weapons) in their lives, 12% reported doing this in the past 12 months and 3% reported doing this at least five times in the past 12 months. More severe acts of violence

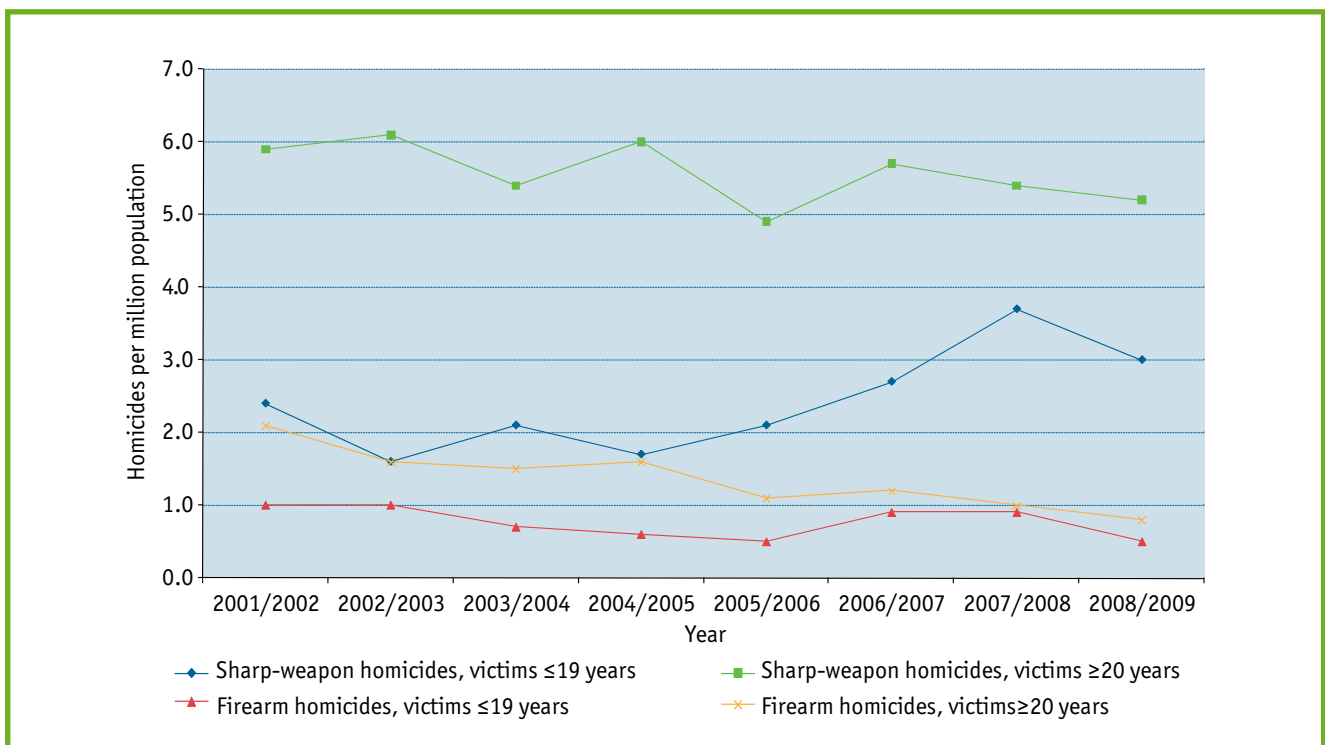


**Fig. 2.8. Prevalence of perpetrating violence, carrying a knife or being a victim among 15-year-olds in Sweden, 1995–2008**



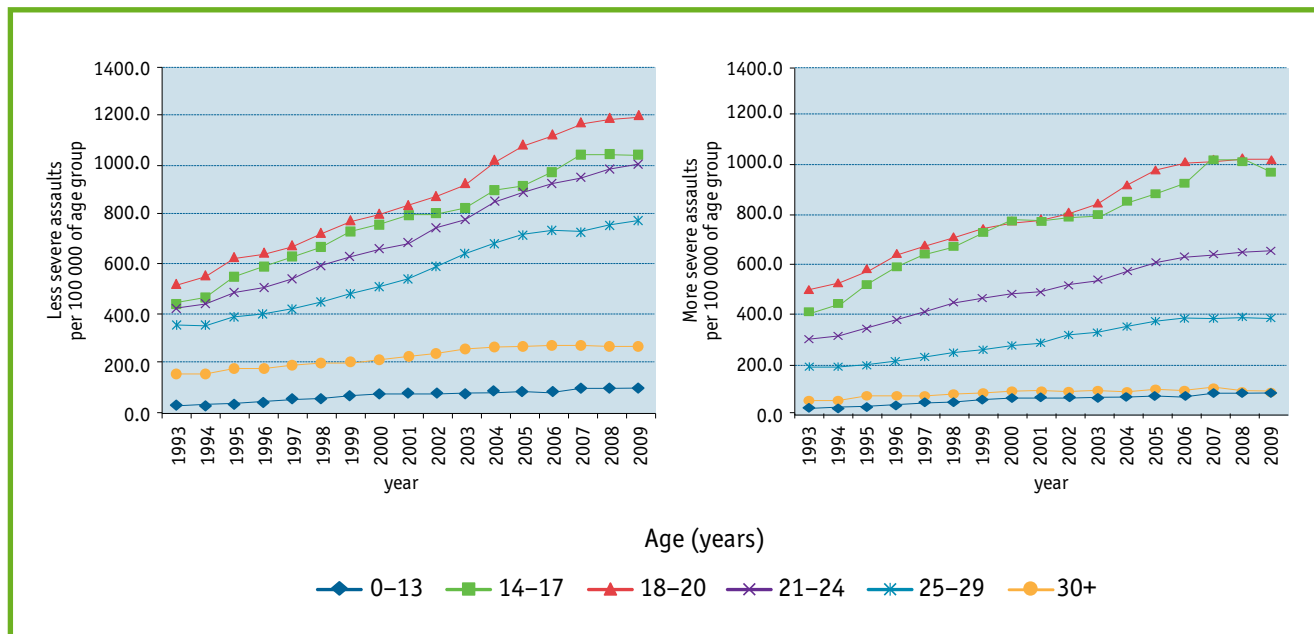
Source: Ring (33).

**Fig. 2.9. Homicide rates by types of weapon used among victims younger and older than 20 years of age in the United Kingdom, 2001/2002 to 2008/2009**



Source: Ward & Diamond (40).

Fig. 2.10. Rates for less severe and more severe assaults by age group in Germany, 1993–2009



Source: *Polizeiliche Kriminalstatistik. Berichtsjahr 2008 (41)*

(involving at least two people and/or the use of weapons) were less frequent, with a lifetime prevalence of 4% and a twelve-month prevalence of 3%. Only 1% reported doing this at least five times in the past year (43,44). Consecutive surveys conducted at different points in time (44,45) show a decrease in reported perpetration of assault in almost all regions of Germany (Fig. 2.11). This downward trend was also confirmed for reported victimization.

The contrasting results between the increase in crime statistics and the actual decline in violence as reported by respondents in surveys can be explained by: better reporting to police due to an increased willingness of young people to do so, improved reporting to police by school principals and a lower threshold for tolerating violence. This is supported by studies reporting reduced exposure to parental violence and changes in attitudes towards violence, including reduced tolerance for it among teachers, parents and peers (46).

### 2.10 Long-term effects

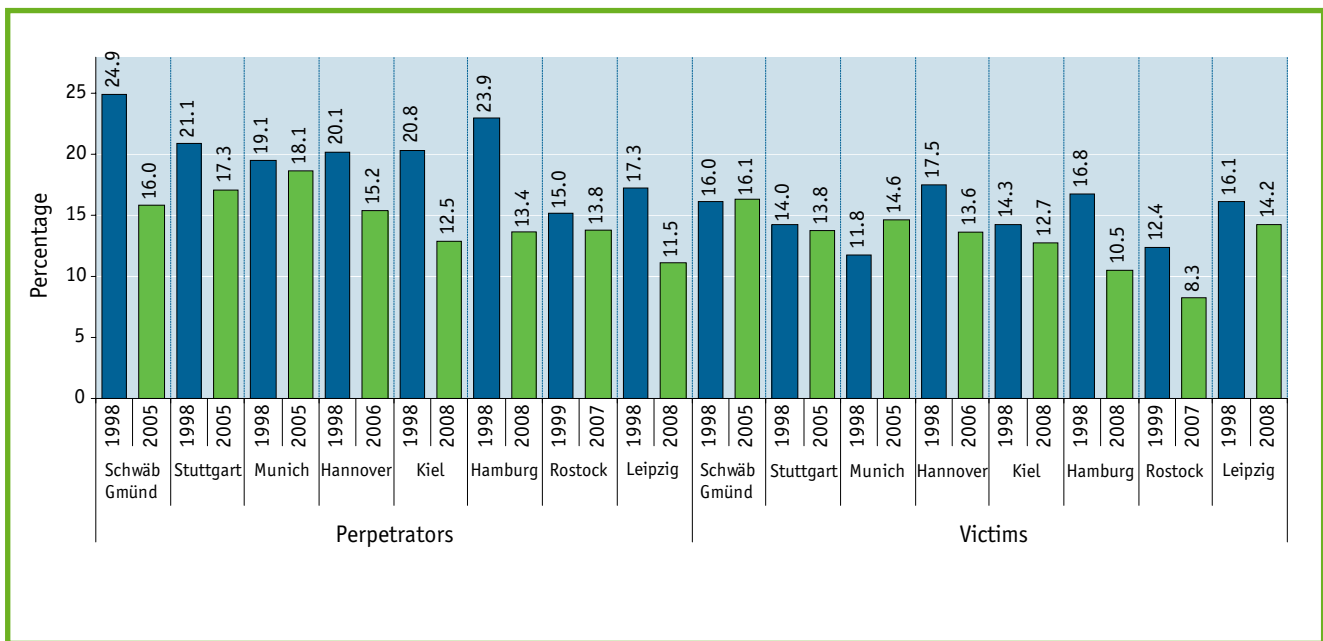
In addition to physical injury, victims of violence are at increased risk of a wide range of mental

and behavioural problems. These include post-traumatic stress disorder, depression, alcohol abuse, anxiety and suicidal behaviour (18). An increased likelihood of violence in later life will affect a small proportion of adolescents who have additional risk factors and exposure. There may be problems with educational achievement and subsequent employment (47). Witnessing violence in the community such as in schools is also associated with adverse emotional adjustment and can also influence educational outcomes (48,49).



Victims of violence may engage in other risk-taking behaviour such as alcohol and substance misuse, smoking and high-risk sexual behaviour, which may

**Fig. 2.11. Twelve-month prevalence of assault as reported by perpetrators (left) and victims (right) in selected cities and rural areas in Germany, 1998 and 2005–2008**



Schwäb. Gmünd: Schwäbisch Gmünd.  
Sources: Wetzels et al. (44) and Wilmers et al. (45).

result in long-term effects from noncommunicable diseases and reproductive health problems (50,51). About 11% of assault victims develop post-traumatic stress disorder, and this is higher among people who have been threatened with a weapon (19%) and those who have witnessed an assault (36%) (52). Victims of violence have an increased risk of depression, substance misuse and anxiety and may need ongoing support to prevent more serious effects (53,54).

## 2.11 Costs

Although violence among young people is costly to society, very few studies have been undertaken (55,56). Interpersonal violence results in great expenditure for health care and law enforcement, criminal justice and social systems. Far greater are the indirect costs of lost productivity and the inability of victims and carers to continue with the tasks of daily living. Using resources for the caring for and rehabilitating victims and for apprehending and incarcerating perpetrators diverts scarce resources from more constructive investment

such as education and welfare. These huge costs affect societal development. Deprived segments of society and poor neighbourhoods are more severely affected by violence, and the diversion of resources results in greater socioeconomic inequality. The fear of interpersonal violence leads to an erosion of human and social capital and negatively affects community development. Violence provokes personal and societal reactions to violence that further widen the gaps between affluent and poor people (55).

The costs of violence (all types and all ages) as estimated by loss in life expectancy are higher in the low- and middle-income countries in the European Region than in high-income countries (57). Some countries in the Region rank among the highest in the world in the burden of disease due to violence as measured by DALYs lost and have among the largest estimated economic value attributed to this as a percentage of their gross domestic product, including the Russian Federation (2.3%), Kazakhstan (1.7%), Lithuania (1.3%), Ukraine (1.2%), Estonia (1.1%) and Latvia (1.0%) (58).

Few countries have comprehensively studied the costs of interpersonal violence and violence due to knives. In Scotland, estimates suggest that violence results in economic losses of £3 billion annually (39,59). The total annual cost of violence among young people in England and Wales has been estimated at £13 billion (13). Estimates of the annual cost of knife-related crime in England and Wales suggest that this is £1.25 billion (20). Studies in the United States of America have estimated that the cost per young person resorting to a life of crime is between US\$ 1.9 million and US\$ 2.6 million and that violence among young people costs the country US\$ 6.6 billion per year (60,61). The costs of violence among young people need to be better understood to better assess the cost-effectiveness of preventive programmes. There are few studies on the costs of violence among young people in the Region, and studies are needed to convince policy-makers to give priority to prevention programmes (54,55). Studies of programmes of proven cost-benefit in the United States of America support the argument for primary prevention (62-64). Similar research also needs to be conducted in the Region.

## 2.12 Conclusion

This chapter has shown that interpersonal violence among young people is the third leading cause of death and a leading cause of disability. There is huge inequality in the Region between low- and middle-income countries and high-income countries. Even in high-income countries, the most deprived population groups are more prone to violence. About 40% of homicides across the Region are due to sharp weapons. Knives are freely available and are quite commonly carried (about 5-12%). Information on nonfatal violence is incomplete in the Region, and efforts need to be made to better address this. The costs to society are vast but need to be studied better in many countries. These data imply that preventing violence from occurring in the first instance would be preferable.

## Key messages for policy-makers

- Violence among young people is a leading public health problem in the European Region.
- It is a leading cause of inequality in health between and within countries.
- Reducing violence mortality rates to the level of the country with the lowest rate in the Region (Germany) could prevent 9 of 10 deaths from violence.
- Greater priority needs to be given to the prevention of violence among young people.
- The root causes of violence should be addressed.

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# 3. RISK FACTORS

## FOR VIOLENCE AMONG YOUNG PEOPLE AND VIOLENCE USING KNIVES

### 3.1 Introduction

A wide range of factors can increase the risk of violence among young people and violence using knives, many of which are common to both perpetrators and victims. This chapter identifies factors related to individuals, their relationships and the communities and societies in which they live that have been associated with violence among young people and the use of weapons: an ecological model of violence (1). Many studies in the European Region have explored risk factors for violence among young people, but most research on weapon use is from the United States of America. These studies often do not distinguish between types of weapons, although when this is reported, sharp objects tend to be the most common

weapons used (2-5). Findings from studies in the United States of America may not be transferable to the European Region, and this chapter therefore identifies studies in the Region wherever possible despite the considerable variation even across the Region. Table 3.1 summarizes the risk factors included in this chapter, identifies which have been studied in the Region and shows the chapter section containing further information. Although many risk factors for weapon use have been explored in research in the European Region, the actual number of studies this represents is small, with studies having been conducted in particular in Israel (6,7), Switzerland (8-10) and Turkey (11,12). Addressing this gap in research in the European Region should be a key priority.

**Table 3.1. Risk factors for violence among young people and violence using knives**

Risk factors		Studies in the European Region	Section of this publication	Risk factors		Studies in the European Region	Section of this publication
Individual	Sex	1, 2	3.2.1	Relationships	Family structure	1, 2	3.3.1
	Age	1, 2	3.2.2		Parental support and relationships	1, 2	3.3.2
	Ethnicity	1, 2	3.2.3		Peer relationships	1	3.3.3
	Mental and behavioural factors	1, 2	3.2.4		Involvement in gangs	1, 2	3.3.4
	Biological factors	1	3.2.4		Social inequality and deprivation	1, 2	3.4.1
	Low academic achievement	1	3.2.5	Community and society	Availability of alcohol	1	3.4.2
	Past victimization or fear of violence	1, 2	3.2.6		Illicit drug trade	1	3.4.3
	Alcohol use	1, 2	3.2.7		Urban and community environments	1, 2	3.4.4
	Other drug use	1, 2	3.2.8		School environments	1, 2	3.4.5
	Delinquent and risky behaviour	1, 2	3.2.9		Weapon availability	1	3.4.7
				Social and cultural norms supporting violence	1	3.4.9	

Note. 1 = Research in the European Region has identified the associations between this risk factor and violence among young people.

2 = Research in the European Region has studied associations between this risk factor and carrying or using weapons.



## Key facts

- Young males are at significantly increased risks of involvement in violence among young people and knife-related violence, particularly those who engage with delinquent peers.
- Children who suffer adverse experiences in childhood are more vulnerable to becoming involved in violence and weapon-carrying in adolescence.
- Exposure to other forms of violence and fear of violence in schools and the community also increases young people's risk of involvement in violence among young people and knife-related violence.
- Income and social inequality and deprivation are strong risks for violence.
- Alcohol and drug use are strongly related to violence and weapon-carrying.

## 3.2 Individual factors

### 3.2.1 Sex

Young males report greater involvement in assault (13) and bullying (14) than females and are at increased risk of carrying weapons and being the victims of knife-related violence. Examples include Israel (7), Switzerland (9,10) and Turkey (11) (see Chapter 2). The International Self-report Delinquency Study found that one quarter of males and 7% of females aged 14–21 years had perpetrated violence in the past year (15). Across 40 (mostly European Region) countries, the 2005/2006 Health Behaviour in School-aged Children survey found that 23% of adolescent boys had been involved in bullying and 16% of girls (14). Boys were more likely to perpetrate bullying, and girls often reported greater victimization. Women can also be at greater risk of victimization through other forms of violence, including sexual and intimate partner violence (16), although violent relationships can often involve abuse by both male and female partners (17). Specific to knife-related violence, in England, 90% of hospital admissions for knife-related assaults are among males (18), and in Scotland, men 15–34

years old have the highest risk of becoming victims of knife-related homicide (19).

### 3.2.2 Age

Different forms of violence can affect young people at different stages of life. Among 11- to 15-year-olds in the Region, the prevalence of being a victim of bullying decreases with age, whereas that of being a perpetrator increases (14). The International Self-report Delinquency Study found the peak age for violent offending to be 18–19 years (20). In England and Wales, a study of people 10–25 years old found that assault perpetration peaked at age 14–15 years, with elevated levels among males aged 12–19 years and females aged 12–17 years. Being a victim of assault was more common in younger groups, in which assaults were most commonly inflicted at school by known perpetrators. Among older victims, assaults were most commonly inflicted in drinking environments by strangers (13).

Studies from Turkey (11,12) and the United Kingdom (21,22) suggest that knife-carrying is most prevalent among older teenagers. In Turkey, the prevalence of carrying a sharp weapon among students 14–21 years old increased with school grade (11), whereas among university students it decreased with increasing university years (12). In England, the median age of hospital admission for a knife-related assault between 1997 and 2005 was 27 years (18). However, hospital admissions for knife assaults among people younger than 16 years increased by 63% between 2003 and 2007 (23). A study found that the risk of being a victim of a major stabbing in the United States of America rose abruptly at age 14 years (24).

### 3.2.3 Ethnicity

Studies often find that the risk of violence among young people varies between ethnic groups (25,26). For example, among girls in Canada, the Netherlands and the United States of America, those defined as being of “western” origin had reduced risks of aggressive and violent behaviour (including weapon-related violence) (26). In



England and Wales, however, the 2008 MORI Youth Survey found no significant differences in knife-carrying by ethnicity (22). It has been suggested that differences in delinquency between ethnic groups are linked to such factors as socioeconomic integration and culture (27). For instance, ethnic minority groups are often concentrated in areas of social and economic disadvantage (28). In Germany, young immigrants from the Russian Federation and Turkey have been more involved in violence than young ethnic Germans, with factors relating to social disintegration and culture (such as parenting styles and masculinity norms) being important in explaining these differences (29). A study in Estonia found no difference in violent offending between young people of Estonian and Russian ethnicity, although differences were found for other crimes, including drug and public disorder offences (30).

### 3.2.4 Mental and behavioural characteristics

Children with personality and behavioural characteristics such as hyperactivity, attention problems, poor behavioural control, sensation-seeking and impulsiveness are at increased risk of becoming involved in violence as young people (9,31,32). For example, a longitudinal study in New Zealand found that children who displayed uncontrolled behaviour at age 3 years, including irritability, impulsiveness and restlessness, were more likely to have been convicted of a violent offence by age 21 years (33). Similarly in Sweden, a strong connection was found between aggressive

behaviour at ages 10 and 13 years and criminal activity (including violent offences) up to age 26 years (34). Such personality and behavioural propensities have been linked to certain nervous system conditions and genetic predispositions that, combined with adverse childhood environments (such as experiencing child maltreatment), can increase the risk of violent behaviour (Box 3.1). Equally, a greater understanding of epigenetics suggests that the same stressful and adverse childhood experiences can alter gene expression. This is likely not only to increase the preponderance for violence among the affected individuals but also leaves them at increased risk of other mental and physical problems later in life (35).

Low self-esteem in adolescence has been associated with aggression (36), as have feelings of hopelessness about the future (such as not expecting to live long or viewing the future negatively) (37), and depression (38).

A study of 14- to 18-year-olds in Finland found associations between involvement in violence and experiencing violent injury in the past month and depressed mood in the past month (39). In the United States, depression, suicidal ideation, feelings of hopelessness about the future and decreased satisfaction with life have been associated with weapon-carrying among young people (31,38,40-42). Poor mental health can be associated with violent behaviour in both directions, both contributing to and resulting from violent behaviour.

### Box 3.1. Effects of biological factors on violence among young people

Certain nervous system conditions have been associated with aggression and violence. Steroid hormones, such as cortisol, are thought to have an influence. Cortisol is generated in a natural diurnal pattern, with high levels just after waking (43); it is also released in response to fear and stress. Interactions between cortisol and aggression are complex; although study findings are not always consistent, in general, aggressive and antisocial young people have stunted basal and reactive cortisol levels (44). In the Netherlands, delinquent boys 12–14 years old with a disruptive behaviour order had a reduced cortisol awakening response and lower basal cortisol levels than control boys (45). Associations between reduced cortisol and antisocial behaviour may relate to individuals with low cortisol levels not fearing the consequences of their actions (46) or engaging in aggressive and dangerous behaviour to elicit stimulation (47).

Characteristics such as impulsiveness, aggression and criminal behaviour have been linked to reduced activity of the monoamine oxidase A gene, which codes for the degradation of neurotransmitters (such as adrenaline and dopamine). A study in the United States of America found that adolescents with low-activity monoamine oxidase A genes were more likely to become gang members and use a weapon during fights than those with high-activity alleles (48). A study in Sweden found that men imprisoned for violent crimes had deficient monoamine oxidase activity (49). The effect of the genotype is co-dependent on the environment in which young people develop. An adverse childhood environment, such as experiencing child abuse, alongside low monoamine oxidase A transcription rates greatly increases the risk of violent or criminal activity (50–52).

Separating the effects of nature and nurture in the development of the behaviour of young people is difficult; however, the fact that both play a part in shaping behaviour is becoming more apparent (53). A longitudinal study using genetic (nature) and environmental (nurture) data from seven-year-old boys examined the interactions between monoamine oxidase A activity and the experience of childhood physical abuse on mental health problems (antisocial behaviour, attention deficit hyperactivity disorder and emotional problems) (54). Being exposed to childhood abuse was found to increase the risk of developing mental health problems, but the effect was more pronounced among boys with low-activity monoamine oxidase A. High-activity monoamine oxidase A moderates the effect of physical abuse on mental health problems, and thus individuals with this genotype can be more resilient to environmental stress.

Studies have also found associations between early onset of puberty and aggression among adolescents (55). Although this relationship requires further study, early puberty can create a lag between physical and psychosocial maturity.

### 3.2.5 Low academic achievement

Numerous studies have associated low academic achievement and aspirations and poor commitment to school with violence among young people (31). For example, Health Behaviour in School-aged Children data in five countries (Ireland, Israel, Portugal, Sweden and the United States of America) showed that poor academic achievement and disliking school were both associated with involvement in physical fighting. However, country-level analysis found that these associations were not statistically significant in the samples from Ireland or Portugal (56). In the United States of America, the 2003 Youth Risk Behavior Survey

found that students with lower grades were significantly more likely to have been involved in a physical fight in the past 12 months and to have carried a weapon in the past 30 days (57).

### 3.2.6 Past victimization and fear of violence

Young people who have experienced violence in childhood are at increased risk of being involved in further violence in adolescence and adulthood. One theory for this association is that children who receive inadequate, abusive or neglectful care have fewer opportunities to learn sophisticated (nonviolent) forms of coping, have heightened sensitivity to perceived threats (such as become

more aroused) and have fewer opportunities to develop the competencies needed to deal effectively with life's challenges (such as positive self-concepts, positive peer relationships and problem-solving skills) (58). In the United States of America, adolescents who have suffered physical or sexual abuse in childhood have increased risks of perpetrating bullying, physical fighting and dating violence (59) (Box 3.2). Associations between violence in childhood and violence in adolescence and young adulthood have also been found in studies in the European Region (such as in Bosnia and Herzegovina (60) and Sweden (61)). Young people with histories of physical or sexual abuse in childhood can also have increased risks of perceiving a need to carry a weapon, actually carrying a weapon and reporting having threatened someone else with a weapon (42,62-64).

Experiencing, witnessing and fearing other forms of violence can also increase the risk of carrying a weapon (5,65). Studies have shown relationships between weapon-carrying and being a victim of physical violence, weapon-related violence (such as being stabbed or threatened with a knife), rape, bullying and other forms of crime (such as having property stolen) (5,9,56,65-73). Among delinquent adolescent girls in Amsterdam, one quarter reported that they had started to carry a weapon as a result of violence committed towards them or another person (26), and 85% of young people who carry weapons in the United Kingdom say that they do so for self-protection (23). Among 12-year-olds in the United States of America, those who felt they needed a weapon for self-protection were 10 times more likely to carry a weapon than those who did not perceive a need for a weapon (63).

Several studies have found correlations between students feeling unsafe and experiencing violence in school and carrying a weapon. Among students in Israel, being scared to go to school due to violence, feeling unsafe in school and having been victimized in school have been associated with carrying knives, guns and other weapons to school (6). Missing school due to safety concerns has also been associated with weapon-carrying among schoolchildren in New Zealand (67) and the United States of America (74).

### 3.2.7 Alcohol use

Alcohol use and violence among young people are strongly associated. Alcohol use can directly affect cognitive and physical functioning, reducing self-control and awareness of risk and increasing emotional lability and impulsivity. This can make drinkers more likely to resort to violence in confrontation and reduce their ability to recognize warning signs in potentially dangerous situations. The broader links between alcohol and violence are complex and can be affected by a range of individual, situational and sociocultural factors (75). However, young people who start drinking at an early age, who drink frequently and who drink large quantities are at increased risk of being both perpetrators and victims of violence (39,76-78). Data from the European School Survey Project on Alcohol and Other Drugs for 15- to 16-year-old schoolchildren found a significantly higher prevalence of alcohol-related aggression in countries in which alcohol intoxication was more common (alcohol-related aggression ranged from 1.2% in Greece to 16.0% in Denmark) (79). Drinking alcohol and getting drunk have also been associated with increased risks of weapon-carrying (5,7,65,68,80). In Israel, 11- to 16-year-olds who reported binge drinking (drinking five or more drinks in one sitting in the past 30 days) were more than twice as likely to be perpetrators of bullying (in the current school term), four times as likely to have been injured in a fight (in the past year) and almost five times more likely to have carried weapons (in the past 30 days) than non-binge drinkers (7).



Young people consume considerable alcohol in pubs, bars and nightclubs. The presence of large numbers of alcohol-consuming young people in such environments (see section 3.4.2) can mean that they and their surroundings are key locations for confrontation, and individuals who visit them regularly show increased risks of violence (81,82). In such settings, the wide availability of glass drinking vessels means that these can be used, often opportunistically, as weapons in violence. A study of patients presenting to emergency departments with facial injuries in the United Kingdom found that half of assaults involving the use of glasses or bottles as weapons had occurred in a public house and that 97% were alcohol-related (the victim or perpetrator had consumed alcohol in the four hours before the incident) (83). Increases in alcohol consumption among young women are likely to have contributed to an increase in violent offences within this group (84).

### 3.2.8 Other drug use

Young people who smoke tobacco or use illicit drugs have an increased risk of being involved in violence (53,56,85–87). Smoking tobacco is likely to be a proxy for risk-taking behaviour among young people rather than a cause. Although the same can be true for illicit drug use, the pharmaceutical effects of some illicit drugs may make people more vulnerable to violence. Substances such as cocaine and amphetamines have been particularly linked to violence (88,89). A study of 14- to 17-year-olds in Belgium, the Russian Federation and the United States of America found that those who smoked or used marijuana or other illicit drugs were more likely to have been a victim of violence (although associations between marijuana and victimization were not significant in the sample in the United States of America) (87). Illicit drugs and violence can also be linked through other mechanisms, including using violence to gain resources to purchase drugs and to control drug trades (see section 3.4.3).

Smoking, using illicit drugs, trying illicit drugs at an early age and engaging in polydrug use (using more than one type of substance) have also been associated with increased risks of weapon-carrying



in adolescents (65,68,80,90–93). Among schoolboys aged 11–16 years in Scotland, one fifth (20%) of non-drug users reported having carried weapons versus 63% of drug users (93). Among both sexes, the proportion of students who had carried weapons increased with the number of illicit drugs they had used, from 21% of those who had used one drug to 92% of those who had used five or more illicit drugs.

### 3.2.9 Delinquent and risky behaviour

Young people who get involved in violence and weapon-carrying tend to also be involved in other forms of delinquency and risky behaviour (9,31,94). The Cambridge study in the United Kingdom found that males who had been convicted of violent crimes between the ages of 10 and 21 years tended to be troublesome, difficult to discipline and dishonest at 8–10 years; to be frequent truants, liars and bullies at 12–14 years; to leave school early; to have early sexual initiation; and, by 18 years, to report drug use, heavy alcohol use, gambling, drink-driving and sexual promiscuity. In general, they had more convictions for nonviolent offences than for violent offences (1,95). Among young people in the United

States of America, involvement in such activities as vandalism, graffiti, theft, joy-riding and drug-dealing predicts weapon-carrying (65,91,96); among delinquent girls, initiating delinquent behaviour at an early age predicts higher levels of weapon-carrying (26). Individuals with a history of arrest have also been found to be more likely to possess a weapon (97). Other factors that have been associated with weapon-carrying include being suspended from school (among girls (5)), involvement in gambling (98) and practising unsafe sex (9). Associating with delinquent peers is also a risk factor for violence among young people and violence using knives (discussed in section 3.3.3).

Aggression and involvement in violence among young people are themselves key risk factors for weapon-carrying. Young people who bully, act violently towards others or report physical fighting (3,5,40,66–69) show an increased risk of weapon-carrying. Studies in the United States of America found that the likelihood of weapon-carrying among high-risk students increased with increasing scores on a scale measuring aggression in the past week (behaviour such as getting angry easily, teasing, name-calling and threatening others (4)). Studies have also found that students who threaten others with violence are more likely to have attacked someone with a knife (70), and students who have stabbed someone in the past 12 months are more likely to carry a weapon to school (65). Carrying or owning a knife is also a risk factor for being involved in violence (8,99).

### 3.3 Relationship factors

#### 3.3.1 Family structure

Family structure can affect a young person's risk of violence. Young people living in single-parent families or in large families (with many siblings) or who have teenage mothers have been found to be more likely to become involved in violence during adolescence (100). For example, a study in Sweden found that adolescents who lived in single-parent families had an increased risk of aggressive behaviour and being a victim of bullying and physical violence. The effects were strongest for those who lived in single-father households (101).

Studies from the United States of America suggest that young people living in single-parent families are also at greater risk of weapon-carrying (69) and that those who live with both parents are less likely to carry weapons than young people reporting other living arrangements (72); however, the findings are not always consistent (80). One study found reduced risks of weapon-carrying among young people in the United States of America who have a mother or female guardian living in their household; the presence or absence of a father or male guardian was not significantly associated with weapon-carrying (65). A study in Switzerland found no independent association between weapon-carrying and living in a single-parent household (9).

#### 3.3.2 Parental support, relationships and norms

Having a poor relationship with parents and carers and low parental monitoring have been associated with fighting and weapon-carrying among young people (9,31,32,56,72,102,103). Analyses of data from the Health Behaviour in School-aged Children survey showed increased risks of fighting among schoolchildren who had difficulty talking to their mother in Ireland, Israel and the United States of America but not in Portugal and Sweden (56). In a study of 16- to 20-year-olds in Switzerland, having a poor relationship with parents was associated with weapon-carrying among men but not women (9). In the United States of America, aggressive behaviour and weapon-carrying were more likely among those who perceive their parents as having attitudes that support fighting (72,102).



### Box 3.2. Adverse childhood experiences, violence among young people and weapons

A growing body of research is taking a life-course perspective on behaviour and health among young people, demonstrating the harmful effects that adverse childhood experiences can have on individuals later in life. Children who suffer abuse as a child or live in a dysfunctional household (for example, one with domestic violence or problematic substance abuse) have an increased risk of developing a range of types of health-damaging behaviour and suffering from poor health and social outcomes in later life, including violence (104,105). A study of 136 549 adolescents in the United States of America found that those who had suffered physical or sexual abuse in childhood were significantly more likely to have perpetrated bullying, physical fighting and dating violence than those who had not experienced abuse and significantly more likely to have reported self-harm and having attempted suicide. Both physical abuse and sexual abuse in childhood were also strongly related to weapon-carrying. The odds of weapon-carrying were about four times higher among people who had suffered physical abuse and about four (female) and six (male) times higher among those who had suffered sexual abuse. Measures of dysfunctional households (witnessing domestic violence and substance use problems in family members) were also associated with increased risks of violence and weapon-carrying. Although each type of abuse and household dysfunction was associated with violence individually, a cumulative effect was seen in which each additional type reported increased the risk of perpetrating violence by between 35% and 144% (59).

Young people who suffer abuse in childhood (see section 3.2.6) or grow up in dysfunctional families (with family conflict) can also experience higher levels of violence and weapon-carrying (59,102), as discussed in Box 3.2.

### 3.3.3 Peer relationships

Young people who associate with delinquent peers have increased risks of violence and weapon-carrying (91,97,103,106,107). The second International Self-report Delinquency Study found that 18% of adolescents with delinquent friends had committed assault in the past year compared with 2% of those without delinquent friends (108). In Germany, having delinquent friends was found to be the strongest predictor of violent behaviour in adolescents (Box 3.3). In the United States of America, having friends who engage in activities that include intentional property damage, joy-riding, fighting, weapon-carrying and weapon use was associated with carrying weapons (97). A different study in the United States of America found that involvement in a delinquent peer group at any time in adolescence could increase violent behaviour and that disengagement from these groups could decrease violence (109). Two types of young delinquents have been identified: early-onset delinquents, who display aggressive and antisocial behaviour from childhood that

can persist into adulthood; and late-onset delinquents, who adopt delinquent behaviour as adolescents but largely grow out of this as young adults. Early-onset delinquents may self-select delinquent peers with similar behaviour, whereas late-onset delinquents associating with delinquent peers in adolescence may facilitate the development of delinquency, for example as young people mimic the behaviour of peers (109,110).



### 3.3.4 Gang involvement

Studies have shown that young people who are gang members are more likely to be involved in violence and carry weapons (65,90,111). For example, a comparative study of adolescents (aged predominantly 12–16 years) in the Netherlands and the United States of America found that, in both samples, those who were members of gangs or troublesome youth groups were more than four times more likely to report having committed a violent offence (112). Among adolescents involved in gangs in the Netherlands and the Russian Federation, about 40–50% had been involved in

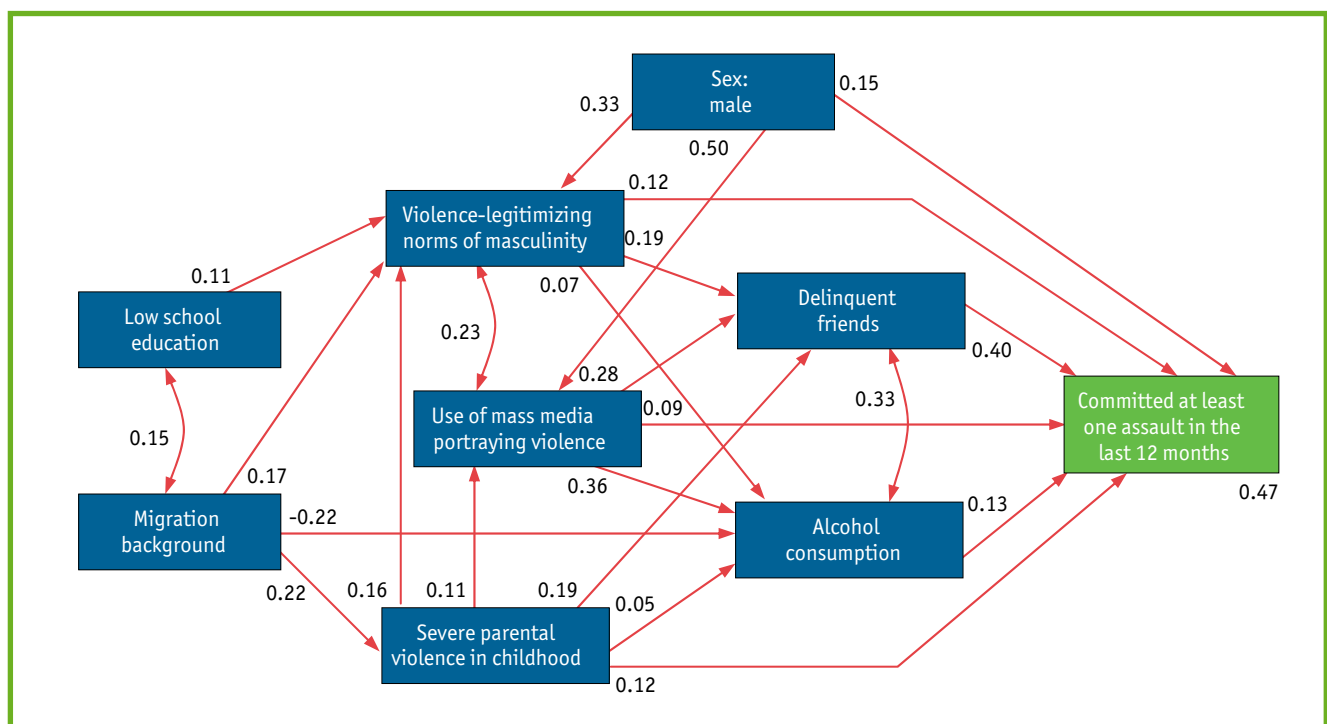
violence. In the Russian Federation study, more than 30% of gang members had carried a hidden weapon for protection, and 11% had attacked someone with a weapon (113). A study of 10- to 19-year-olds in the United Kingdom found that 44% of those who reported belonging to a delinquent youth group had committed violence and 13% had carried a knife in the previous 12 months versus 17% and 4% respectively among those who were not in such a group (114). However, interviews with gang members known to public authorities have suggested that knife-carrying may be far more commonplace in some violent gangs (115).

#### Box 3.3. Identifying risk factors for violence among young people in Germany

Research into the risk factors for violence among young people is well developed in Germany. Individual and relational perspectives have dominated this research, although some studies have investigated how community factors influence violent behaviour. These studies suggest that, although neighbourhood-level factors can potentially affect more individuals, factors that operate at the individual and relationship levels may have stronger effects (116).

Using data from a self-report study of 44 610 adolescents aged 13–17 years in Germany, Fig. 3.1 shows the findings of a path analysis to identify the main risk factors associated with committing more than one severe assault in the past 12 months. The numbers on the paths can range between 0 and 1 (or –1, indicating a negative association). The closer a number is to 1 (or –1), the stronger the relationship between the linked factors.

Fig. 3.1. Risk factors and causes of violent behaviour among young people in Germany



Source: unpublished school survey 2007/2008, Dirk Baier and Sussan Rabold, Criminological Research Institute of Lower Saxony, Hanover, Germany.



## Key findings from this analysis

- Having delinquent friends is the strongest predictor of violent behaviour.
- Alcohol consumption, parental violence, using mass media that portray violence (such as video games and movies) and acceptance of violence-legitimizing norms of masculinity<sup>a</sup> all explain violent behaviour to a similar but smaller extent.
- Boys are at considerably higher risk of violent behaviour than girls. They are also more likely to use mass media that portray violence and accept violence-legitimizing norms of masculinity.
- Beyond the direct paths are important indirect paths. For instance, the experience of parental violence is a risk factor for using mass media that portray violence, alcohol use and having violent attitudes.
- Adolescents with a migrant background are not more violent than those who are ethnically German per se. However, there are indirect paths to violence, with migrants more likely to experience parental violence and to accept norms of violence.
- The use of mass media that portray violence enhances violent norms and vice versa.

Source: unpublished data from Dirk Baier and Sussan Rabold, Criminological Research Institute of Lower Saxony, Hanover, Germany.

<sup>a</sup> Violence-legitimizing norms of masculinity were measured by such items as “If a woman cheats on her partner, he is allowed to beat her” or “A man who is not willing to respond to insults violently is a wimp”.

## 3.4 Community and society factors

### 3.4.1 Social inequality and deprivation

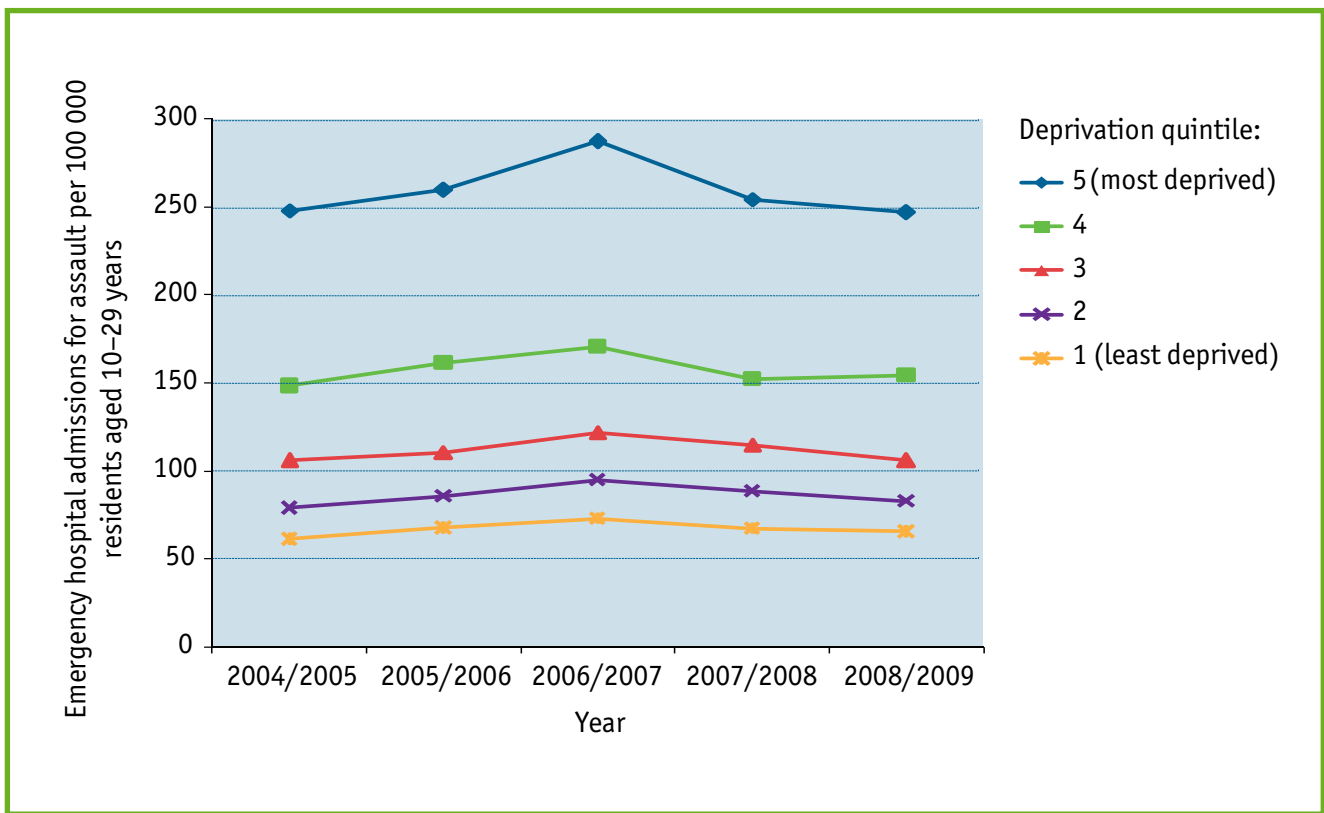
There are strong relationships between violence and social inequality and deprivation. The rates of emergency hospital admissions for assault are around four times higher among people 10–29 years old in England who live in the most deprived areas than among those who live in the least deprived areas (unpublished Hospital Episode Statistics, routine analysis from the Centre for Public Health, Liverpool John Moores University, 2010) (Fig. 3.2). Similar trends are seen among children 0–14 years old, showing that relationships between social deprivation and violence can be established very early in life (117).

In Scotland, death rates for assaults involving sharp weapons are significantly elevated among individuals from the most deprived areas compared with those from the least deprived areas (118). In Israel, students in schools with a high proportion of students from socioeconomically deprived families have been found to be more likely to carry knives (6). However, a study in Sweden found that area-level measures of socioeconomic deprivation

were not independently associated with violent injury in children and adolescents but that high concentrations of social benefit recipients were (119). Here, receiving social benefits was explained as being likely to reflect a clustering of health and psychosocial problems.

Several studies have found income inequality to be more important in predicting violence than overall poverty levels, with studies finding homicide rates increasing along with the magnitude of income differences between those with high income and those with low income (120–122). Such relationships are thought to be linked to factors such as poor social trust and relationships in unequal societies (see section 3.4.4). A study across 33 countries, including many in the European Region, found correlations between income inequality and both homicide and social capital (interpersonal trust) and suggested that societies with substantial income inequality and low societal trust may lack the social capacity needed to develop safe communities (123). Analysis of the Health Behaviour in School-aged Children survey covering 37 (mostly European Region) countries has also shown associations between country-level income inequality and school bullying (124).

**Fig. 3.2. Emergency hospital admissions for assault in England, 2004/2005 to 2008/2009: crude rate per 100 000 residents aged 10–29 years by deprivation quintile**



Source: unpublished Hospital Episode Statistics, routine analysis from the Centre for Public Health, Liverpool John Moores University, 2010.

### 3.4.2 Alcohol availability

Easy access to alcohol can contribute to violence among young people. For example, high densities of alcohol outlets have been associated with increased violence in several countries (125).

In Norway, the increasing density of alcohol outlets (number of public drinking premises per 10 000 inhabitants) between 1960 and 1995 was associated with growing numbers of violent crimes investigated by the police. An increase of one alcohol outlet corresponded to an increase of 0.9 assaults investigated each year (126).

Few studies have explored the influence of the actual volume of alcohol sold in communities on violence or the role of alcohol availability on knife-related violence. However, in Canada, the risk of hospitalization due to an assault involving a sharp or blunt weapon increased with the volume of alcohol sold in local stores (127).

Certain environmental factors in drinking environments can also contribute to increased aggression and violence. Studies have associated factors such as crowding, promotion of inexpensive drinks, tolerance of antisocial behaviour, poor cleanliness, loud music and poor staff practices with violence and other alcohol-related problems in drinking premises (128).



### 3.4.3 Illicit drug trade

Violence can be a systemic part of the illicit drug trade, used for purposes such as solving disputes, sanctioning informers, eliminating rivals and punishing debtors (129,130). Thus, the presence of illicit drug trade, and particularly involvement in drug markets, is associated with both violence and weapon-carrying (130–137).

In the United States of America, the introduction of crack cocaine into metropolitan areas was found to have contributed to increased assault and homicide, which later declined as drug market activity declined (131,138–140). A study of drug markets in London found that violence was commonly used to enforce drug debt payments, with the highest levels of violence occurring in large inner-city drug markets that featured transient populations, unstable buyer–seller relationships and high competition (130).

A study of 14- to 17-year-old detainees in Canada, the Netherlands and the United States of America found that those involved in selling drugs reported greater involvement in violence as a perpetrator than as a victim while selling drugs. One quarter had been injured or assaulted and robbed by someone while selling drugs in the previous year, and almost half had inflicted injury or assault and robbery on someone else. Two thirds reported having carried or used a weapon while selling drugs (140).

### 3.4.4 Urban and community environments

Young people living in urban areas tend to be at increased risk of violence and knife-related violence (23,141–143). In Sweden, for example, the incidence of stab wounds has been associated with densely populated counties (144), while in England, increases in hospital-treated knife assaults between 1994 and 2008 disproportionately affected urban residents (22). However, some studies in the United States of America have found that young people in rural areas have an equal or even increased risk of carrying weapons (25,145). The reasons for weapon-carrying are likely to differ between rural and urban areas.



Community disorganization, low levels of neighbourhood resources and low social capital (such as poor social cohesion and a lack of trust among community members) can be important contributors to violence among young people (107,146,147). Country-level data from the International Self-report Delinquency Study found that neighbourhood problems (such as delinquency, drug dealing and graffiti) were strongly associated with violence among young people (32). In the United States of America, low social support, including from teachers, classmates, friends and parents, has been associated with an increased risk of weapon-carrying (147). Also in the United States of America, the risk of being involved in violence at age 18 years increased when young people were exposed to community risk factors in adolescence, including community disorganization, the availability of drugs and the presence of crime-involved adults in the community (148). Exposure to and fear of violence in the community has been found to increase the risk of weapon-carrying, with one study in the United States of America finding that, the more fearful students were of other people living in their neighbourhood, the more likely they were to carry a weapon (149). A different study in the United States of America found significant relationships between exposure to community violence and weapon ownership among at-risk young people. Here, each increase on a scale measuring participants' frequency of exposure to community violence (such as hearing gunshots, seeing drug deals and seeing someone beaten up, shot or stabbed) increased participants' likelihood of owning a weapon (97). In this study, neighbourhood disadvantage was not significantly associated with weapon ownership.

### 3.4.5 School environment

The environment of schools that children attend can influence their behaviour and risk of involvement in violence among young people. Children with negative perceptions of the school climate (such as student behaviour and teacher control) and less attachment to school can be at greater risk of exposure to violence and weapon-carrying (15,67,150). In Israel, having a negative perception of school policy has been associated with carrying a knife to school (6), while young men carrying a weapon in Switzerland who had used their weapon in a fight were more likely to report poor attachment to school (9).

In the United States of America, social disorganization at the school level, including high student–teacher ratios and suspension rates, has been associated with bullying (151). Students in Switzerland aged 16–20 years in vocational schools (versus other schools) and in classrooms with higher levels of violence and antisocial behaviour among fellow students (versus lower levels) were more likely to have been involved in violence themselves in the previous 12 months (152). One study in the United States of America found that students who had seen other students carrying knives at school were more fearful of being stabbed at school (153). However, those who thought it was easy to carry a knife to school were no more likely to be fearful about being stabbed at school. The authors suggested that students' knowledge of weapon-carrying in school could therefore be more important in influencing their fear of violence than their perceptions of school security measures.

### 3.4.6 Institutional environments

Children and young people living in institutional settings may be particularly vulnerable to violence among young people. A study of children living in residential care homes in the United Kingdom found that most of those surveyed had suffered verbal attacks by peers, and almost half had been victims of physical attacks or attacks on their property (154). Children who are referred to

residential care homes have often suffered adverse childhood experiences, making them vulnerable to involvement in violence among young people as both victims and perpetrators (see Box 3.3). Factors that have been identified as contributing to peer violence in residential care home settings include a lack of clear aims and objectives, an inability to meet the needs of young residents, a lack of control over referrals and inadequate admission processes and an acceptance of macho and hierarchical cultures (154). Such cultures can also affect other institutional settings, such as boarding schools and military academies.

### 3.4.7 Availability of weapons

The availability of weapons in households or communities can make them easily accessible to young people. Studies of availability of firearms have shown that countries or states with less restrictive policies on firearms and higher ownership of firearms tend to experience higher levels of firearm-related violence (155–157). Having easy access to a gun has been associated with weapon-carrying among young males in the United States of America (158). Although few studies have explored the effects of knife availability, a large, national study of male army recruits in Switzerland (aged 20 years) found that the prevalence of self-reported injury-causing violence in the past 12 months increased from 1.5% among those who owned no knives to 4.6% among those who owned one or two knives and 8.9% among those who owned three or more knives. Similar increases were seen according to ownership of other weapon types (8). Perceptions of widespread knife availability and carrying in the community can also contribute to weapon-carrying by encouraging young people to carry knives as a form of protection (159).

### 3.4.8 Women and gender inequality

Although women are less likely to be involved in violence among young people per se, they can be at increased risk of being victims of certain types of violence, particularly intimate partner violence and

sexual violence. International studies have found that violence against women can be increased in societies in which women have less economic and social power or in which male superiority is accepted and violence tolerated (1). Studies in the United States of America have shown that female adolescents and young adults who report less power within intimate relationships experience higher levels of dating violence (160,161). Few studies have explored the role of gender in knife-related violence. However, qualitative research within the United Kingdom has suggested that young “girlfriends” and other female associates (such as sisters) of violent gang members can often be exploited, including being subjected to physical and sexual abuse by partners and other gang members (162,163).

#### 3.4.9 Social and cultural norms supportive of violence

Social and cultural norms that are tolerant of violence, for example by endorsing violence as a normal method of resolving conflict or punishing a child, can support and reinforce violence in society (1). Young people can learn social tolerance towards violent behaviour in childhood, for example through the use of corporal punishment (164) or witnessing family and other forms of violence (see section 3.2.6) (165,166). In the United States of America, adolescents who perceive their parents as having attitudes supportive of violence (68) have shown higher levels of aggression and weapon-carrying (72,102). Children who live in communities with high levels of crime, gang involvement and drug-dealing can also be sensitized to these problems and the violence associated with them (see section 3.4.4) (107).

For many years there has been a scientific and public debate about whether consuming mass-media products portraying violence influences actual violence. Although evidence for such an effect from violent movies is ambiguous, for violent video games a meta-analysis of more than 130 studies strongly suggested that exposure to such games is a causal risk factor for increased aggressive behaviour, aggressive cognition and

aggressive affect and for decreased empathy and prosocial behaviour (167). In a study in Germany, exposure to violent video games at around age 13 years predicted involvement in physical violence 30 months later (168). One possible explanation for this effect is that playing violent video games is more interactive than watching films.

### 3.5 Factors protecting against violence among young people and violence involving knives

Just as certain factors increase the risk of violence and weapon-carrying, studies have identified a range of factors that are associated with reduced risks of violence among young people and weapon-carrying. Developing and strengthening these protective factors forms the basis of many primary prevention programmes (see Chapter 4). These protective factors include individual, relationship and community and societal factors.

As to individual factors, young people who have positive self-esteem, good social skills, emotional control and good academic achievement generally have a lower risk of being involved in violence among young people (32,107). Studies in the United States of America have found that having greater life satisfaction and aspirations for the future protect against weapon-carrying (80,169).

As to relationship factors, young people who report strong bonds with their parents, parental monitoring, family cohesion and association with positive peer groups can experience less violence among young people (15,72,107). Factors including good family communication, participating in activities with adults (such as eating dinner together, visiting relatives and doing chores) and having peer role models have all been found to protect against weapon-carrying among young people in the United States of America (5,25,74,169). One study found that, although parental connectedness protected against the initiation of weapon-related violence, it did not buffer such violence once this had begun. This suggests that, if violence escalates to the point that young people use weapons, parents may have missed the opportunity for effective intervention (25).

As to community and societal factors, strong school bonding, opportunities for prosocial involvement in school and the community and access to social support and services can reduce young people's risk of violence (107,150). Studies in the United States of America have found that good school connectedness (such as feeling safe, happy and involved in school life) protects against weapon-carrying (5,25). Some studies have also found that community involvement and participation in religious activities protect against weapon-carrying (3,169).



### 3.6 Conclusions

This chapter has shown that numerous risk factors interact to result in violence among young people and knife-related violence. Young males have a significantly increased risk of being involved in violence. Being a victim of child maltreatment and having other adverse experiences in childhood are important risk factors for being a victim or perpetrator of violence in youth. This emphasizes the need to undertake a life-course approach. Other risk factors for weapon-carrying or violence include fear of violence in the community, associating with peers who are violent or engage in delinquent behaviour and being exposed to alcohol and drugs. Social and economic inequality is strongly linked to violence among young people. There are, however, protective factors such as good parenting, educational achievement, social skills and positive community support. The next chapter considers programmes that reduce these risk factors and enhance protective factors to prevent violence among young people.

### Key messages for policy-makers

- No single factor causes violence among young people and knife-related violence, but a wide range of factors can interact to increase young people's risks.
- Protective factors include good social skills, self-esteem, academic achievement, strong bonds with parents, positive peer groups, good attachment to school, community involvement and access to social support.
- Reducing risk factors and strengthening protective factors is a cost-effective way of preventing violence and weapon-carrying among young people.
- Strengthening the knowledge base of risk factors using a life-course approach in the Region should be a key priority.

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# 4. EFFECTIVE INTERVENTIONS AND PROGRAMMING

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## 4.1 Introduction

Violence among young people and violence involving knives can be prevented. Numerous approaches have been developed, implemented and tested for their effectiveness in preventing young people from becoming involved in violence and weapon-carrying and in reducing violent behaviour among young offenders. The evidence base for preventing violence among young people is much better developed than that for violence involving knives. Since young people's involvement in violence often precedes knife-carrying and use, however, the benefits of interventions that successfully prevent violence among young people should extend to violence involving knives. Further, the evidence supporting primary prevention measures that strengthen protective factors among young people is more robust than that for measures that seek to reduce violence among young people once it has emerged. Thus, preventing violence involving knives requires a multifaceted approach that addresses not only the weapon but also the root causes of violent behaviour.

This chapter summarizes evidence for programmes designed to prevent and reduce violence among young people and violence involving knives. It is divided into primary prevention strategies and secondary and tertiary prevention strategies.

Primary prevention strategies seek to prevent young people from becoming involved in violence and reduce the availability of weapons. This includes (1) indirect approaches that do not address violence directly but influence the risk and protective factors that can affect young people's chances of being involved in violence in later life and (2) direct approaches that specifically seek to prevent violence by, for example, modifying the environments in which violence occurs.

### KEY FACTS

- Research shows that youth and knife violence can be prevented.
- The best evidence for prevention supports programmes that target children early in life, such as parenting programmes, preschool enrichment and life skills interventions.
- Modifying settings can also reduce violence, including through bullying prevention programmes in schools and managing drinking environments.
- Reducing the availability and misuse of alcohol is an important strategy for youth violence prevention.
- The evidence for measures that seek to reduce violence in young people who are already engaging in such behaviour is generally less well-developed.
- Problem oriented policing approaches and intensive treatment programmes for young offenders report positive results in reducing violence.

Secondary and tertiary approaches aim to reduce violence and the use of weapons among young people who are already engaging in antisocial and violent behaviour.

A final section discusses the importance of data in developing, targeting and monitoring the prevention of violence among young people and violence involving knives, and the particular importance of health data.

An increasing body of research within the European Region is exploring the appropriateness and effectiveness of internationally developed programmes in European settings and testing

**Table 4.1. Summary of evidence for interventions to prevent and key agencies involved in their delivery**

Intervention type		Evidence of effectiveness <sup>a</sup>	Effects in preventing violence tested in the European Region	Section of this report	Agencies involved					
					Health services	Local authorities	Social and family services	Education	Criminal justice	Governments
Indirect primary prevention approaches	Parenting programmes	b, c	✓	4.2.1	✓	✓	✓			✓
	Preschool enrichment	b, c		4.2.2	✓	✓	✓	✓		✓
	Social development programmes	b, c, d	✓	4.2.2				✓		✓
	Academic enrichment programmes	e		4.2.2	✓	✓	✓	✓	✓	✓
	Reducing access to alcohol	b, c	✓	4.2.3		✓			✓	✓
	Dating and relationships programmes	b		4.2.4	✓		✓	✓		✓
	Social norms approaches	d, f	✓	4.2.5				✓		✓
	Reducing inequality	g		4.2.6	✓	✓	✓	✓	✓	✓
Direct prevention approaches	Legislating minimum age for purchasing knives	g		4.3.1		✓			✓	✓
	Using safer drinking vessels	e	✓	4.3.1	✓	✓			✓	✓
	Programmes for preventing bullying	b	✓	4.3.2				✓		✓
	Managing drinking environments	b, c	✓	4.3.3		✓			✓	✓
	Urban design strategies	e	✓	4.3.4		✓			✓	✓
	Social marketing, media and education programmes	e	✓	4.3.5	✓	✓			✓	✓
Secondary and tertiary approaches	Strengthening and enforcing knife-carrying laws	g		4.4.1					✓	✓
	Knife amnesty	d, f, h	✓	4.4.2					✓	✓
	Problem-oriented policing	b, d, i		4.4.3	✓	✓	✓		✓	✓
	Multi-systemic therapy	b	✓	4.4.4	✓	✓	✓	✓	✓	✓
	Behaviour-change counselling	e	✓	4.4.4	✓					✓
	Programmes for intervening in and preventing gangs	e		4.4.4			✓	✓	✓	✓
	Mentoring programmes	f		4.4.4		✓	✓	✓	✓	✓
	Multicomponent measures to reduce violence	d, f	✓	4.4.5	✓	✓	✓	✓	✓	✓

- a Wherever possible, the strength of the evidence has been assessed using an inclusive approach covering the range of study designs used in assessing each intervention type. Additional weight is given to those using a randomized controlled approach.
- b There is evidence of effectiveness in preventing or reducing violence among young people.
- c There is evidence of economic benefits.
- d There is some evidence of effectiveness in reducing weapon carrying and use.
- e The evidence of effectiveness in preventing or reducing violence is currently underdeveloped or unclear.
- f There is emerging evidence of effectiveness in preventing or reducing violence among young people.
- g No studies examining the effectiveness of these measures on violence among young people were identified.
- h Studies on knife amnesty have found the benefits to be short-lived.
- i Studies in the United States of America have shown reductions in firearm-related violence, but the effects on knife-related violence have not been measured.

measures that have been initiated in the European Region.<sup>9</sup> Strengthening this evidence is a key requirement to inform effective measures to prevent violence among young people across the Region.

Table 4.1 summarizes some of the key measures discussed in this chapter. Based on a literature review conducted for this report, it shows the strength of evidence to support the effectiveness of each measure in preventing or reducing violence among young people, the key agencies involved in delivering each intervention and where to obtain further information in this chapter.

## 4.2 Indirect primary prevention approaches

### 4.2.1 Parenting programmes

Early interventions that improve parenting skills and strengthen relationships between children and parents and other carers can have long-lasting benefits in preventing violence. Often targeted at high-risk families, parenting programmes provide support and information, strengthen parents' ability to adapt to their children's needs, develop strategies to cope with children's behaviour and increase knowledge about children's development and capabilities. Programmes with the most evidence of effectiveness include Nurse-Family Partnership<sup>®</sup> (1), Triple P (Positive Parenting Program<sup>®</sup>) (2) and The Incredible Years (3). The Incredible Years, developed in the United States of America, uses videotapes of parenting techniques, group discussion and role play to develop skills among the parents of children aged 2–10 years. It has reduced child conduct problems, at least in the short term, in countries including Ireland (4), Norway (5), Sweden (6), the United Kingdom (7) and the United States of America (3). Triple P, developed in Australia, has also shown evidence of effectiveness in the European Region, such as Switzerland (8). In Australia, an economic evaluation of Triple P suggested that it is cost

effective when it reduces conduct disorder by at least 7%; based on two trials, the authors assumed it had the potential to reduce conduct disorder by between 25% and 48% (9).

Nurse-Family Partnership, developed in the United States of America, has been evaluated over a longer period and has shown lasting effects. Nurse-Family Partnership provides first-time, low-income mothers with regular home nursing visits from early pregnancy to the child's second birthday. Nurses promote positive parenting, health-related behaviour and maternal development, including family planning, education and employment. A fifteen-year follow-up study of Nurse-Family Partnership found that it reduced perpetration of child maltreatment, criminal behaviour and use of welfare services among the mothers participating (10). Further, by the age of 15 years, children whose mothers participated in Nurse-Family Partnership showed reduced incidents of running away, arrests, convictions and behavioural problems related to the use of alcohol and drugs (1). Economic evaluation in the United States of America suggested that Nurse-Family Partnership generated a saving of US\$ 2.88 for every US\$ 1 invested, largely accounted for by reductions in crime (11,12). Nurse-Family Partnership is being used in some countries in the European Region, including Germany (13) and the United Kingdom (14).

### 4.2.2 Life and social skills training

Programmes that develop life and social skills among young people can help protect them from violence by building their social and emotional competencies, teaching conflict-avoidance skills and providing broader skills to help them find employment and avoid poverty and crime. There is good evidence for their effectiveness in preventing violence among young people and other high-risk behaviour, particularly when targeted towards at-risk children early in life.

#### 4.2.2.1 Preschool enrichment programmes

Preschool enrichment programmes prepare children for school by enhancing their physical,

<sup>9</sup> Many of the approaches to youth violence prevention discussed in this section have been developed and evaluated in North America. The transferability of international evidence to European settings and situations requires some caution.



social, emotional and cognitive development in the first few years of life. Studies in the United States of America have shown that preschool enrichment can prevent aggressive behaviour in childhood (such as Early Head Start (15)) and violent criminal behaviour in later life (such as the HighScope Perry Preschool Project (16)). The Chicago Child-Parent Center targeted children 3–9 years old from deprived areas, providing preschool enrichment (daily classroom sessions covering language, arts, reading and math) and a parenting programme, followed by ongoing education and family-support services when children entered formal education. Follow-up studies when children had reached ages 18 and 24 years (17,18) found that those who had participated in the Chicago Child-Parent Center had lower levels of arrest for violent offences than control children, with effects greater for those who stayed in the programme longer. Participation in the preschool programme was also associated with lower levels of child maltreatment (19).

In the United Kingdom, Sure Start Children's Centres provide early-years education, child-care services, support for parents, family health services and employment support for parents. Sure Start was established in England in 1999, initially targeted at families in the most deprived areas, and has since expanded across the country. An evaluation of the programme found that children aged three years living in deprived Sure Start areas showed more positive social development and social behaviour than children from equivalent areas without Sure Start (20).

Cost-benefit analyses in the United States of America have suggested that high-quality preschool enrichment programmes targeting at-risk children can generate significant economic returns (10,21,22). A meta-analysis of studies on early education for 3- and 4-year-olds from low-income families estimated an average benefit of US\$ 2.36 for every US\$ 1 spent based on effects such as reduced crime, child abuse and expected changes to lifetime earnings (10). Longer-term follow-up studies can strengthen this evidence. For example, the costs and benefits of the HighScope Perry Preschool Project were estimated

at US\$ 8.74 per US\$ 1 invested when participants were age 27 years; this increased to US\$ 17.07 when participants were aged 40 years, as criminal justice savings and earnings benefits were greater than had been expected (16,22).

#### 4.2.2.2 Social development programmes

Social development programmes can be delivered to children universally or can target those most at risk of violence and are typically delivered in classroom settings. They aim to develop children's social skills and competencies including: anger management, problem-solving, conflict resolution, assertiveness, active listening, knowledge about healthy relationships and empathy. Social development programmes have shown positive effects on prosocial attitudes (such as empathy), beliefs supportive of violence, aggressive and violent behaviour, school delinquency, bullying and bully victimization (23–29). They have also been associated with a reduction in the frequency of weapon-carrying (30).

Most studies on social development programmes are from the United States of America, but several programmes have been evaluated in the European Region. For example, the Second Step programme includes a series of lessons, each of which introduces a photograph and social scenario, that are used as the basis for discussion, role play and other activities covering three core areas of empathy training, impulse control and anger management (23). Second Step has improved problem behaviour and social competence among children in Germany (31) and Norway (32) as well as the United States of America (23). Other programmes used in the Region include Zippy's Friends, which teaches coping skills to children and has reduced problem behaviour in Lithuania (33). Most evidence in the European Region has only identified short-term outcomes, but longer-term outcomes have been seen in the United States of America. For example, the Seattle Social Development Project combined a social development programme with teacher training and parent education. Participating children had reduced violent delinquent acts compared with

a control group six years later (34). The Seattle Social Development Project has been estimated to save US\$ 3.14 for every US\$ 1 invested (11).

#### 4.2.2.3 Academic enrichment programmes

Academic enrichment programmes provide study support and leisure activities to children outside school hours. They aim to improve academic performance, school involvement and attendance and to divert children from delinquency. Studies in the United States of America have provided little evidence for the effectiveness of academic enrichment in preventing violence. Evaluations from programmes that target high-risk young people have been mixed and often shown no, or sometimes even negative, effects (35,36). However some positive results have been reported, for example by CASASTART<sup>SM</sup>. This community-based, school-centred programme involves intensive case management of high-risk children 8–13 years old and provides access to after-school and summer recreational activities as well as family and educational services, social support, mentoring, community policing and criminal and juvenile justice interventions (37).

In the United Kingdom, the Extended Schools programme uses school settings to provide academic enrichment activities, along with services for parents, families and communities, such as child care and adult learning. Targeted in deprived communities, extended schools have shown positive effects on numeracy, literacy, school attendance, examination outcomes and pro-school attitudes (38,39). In countries including the Netherlands, Norway and Sweden, similar extended schools aim to improve the effectiveness of the education system and prevent child deviance by offering immediate child support and intervention. With a focus on deprived areas, schools' functions have been extended by introducing social work services into schools, lengthening the school day with recreational activities, providing services such as parent training programmes and developing strong links with health, police and other community services. The effects of these programmes on violence have not been measured.



#### 4.2.2.4 Community-based programmes

Programmes that work at the community level, developing strong partnerships between schools, families and communities, have been associated with increased school achievement and reduced behavioural problems (40,41). For example, the Communities That Care system in the United States of America empowers communities to address behavioural problems among young people by identifying and acting on locally relevant risk and protective factors. A randomized controlled trial of Communities That Care found lower initiation to delinquent behaviour (such as violence, theft and vandalism) among children from participating communities compared with controls (42). Communities That Care is used in several countries, including the Netherlands and the United Kingdom.

#### 4.2.3 Reducing access to alcohol

The use of alcohol is strongly associated with violence among young people (43), and measures that reduce the availability of alcohol can be important in reducing violence.

##### 4.2.3.1 Changing alcohol service hours

Studies in Brazil (44) and in aboriginal communities in Australia (45) have associated reduced hours of alcohol sales with reduced homicides (Brazil) and crime (Australia). For example, in Diadema, Brazil, a municipal law that prevented the sale of alcohol after 23:00 was estimated to have reduced homicides by 44% over three years (44). Longer alcohol service hours have been introduced in

some countries to prevent peaks in alcohol-related violence associated with fixed bar-closing times. In Australia, increased assaults were seen in venues that extended their opening hours (46). The introduction of extended opening hours in England and Wales was not associated with increased violence, although some evidence indicates that the timing of violence shifted to later in the night (47,48).

Restrictions can also be placed on the days of the week on which alcohol can be sold. In 1981, for example, the Government of Sweden implemented a trial that closed liquor stores on Saturdays. During the study period, both indoor and outdoor assaults declined as well as domestic and public disturbances (49). In 2000, the reopening of liquor stores on Saturdays was trialled and, in 2001, reinstated across the country. Alcohol sales increased following Saturday reopening, but the number of assaults did not change significantly (50).



#### 4.2.3.2 Density of alcohol retail outlets

Several studies have shown associations between the number of alcohol retail outlets and alcohol-related problems, including violence (51). In California, United States of America, a study explored the effects of closing several alcohol outlets in Los Angeles after they were damaged in riots. It found that violent assault rates declined one year after the reduction in alcohol availability and lasted for five years (52). A different California study estimated that a reduction of one bar in a zip code area would reduce assaults by 1% in that area (53).

#### 4.2.3.3 The price of alcohol

Estimates suggest that increasing the price of alcohol would help to reduce violence. In England, economic modelling estimated that setting a minimum price for alcohol of £0.50 per unit (8 g of pure alcohol) would reduce violent crime by 2%, equivalent to 10 300 violent crimes per year (with more than one third of these involving people 11–24 years old) (54). The broader societal value of the harm reduction generated, including savings to health services, criminal justice agencies, employment and quality-adjusted life-years (QALYs), was estimated to exceed £12 billion over 10 years. In the United States of America, economic modelling suggested that a 10% increase in the price of beer would reduce the number of college students involved in violence each year by 4% (55).

Few studies have explored the effects of increasing alcohol prices in practice. However, in the Northern Territory of Australia, the Living Without Alcohol programme was funded by a state levy on alcoholic drinks above 3% alcohol by volume, adding \$A 0.05 to the price of a standard drink. The levy remained in place from 1992 to 1997, when a High Court ruling prevented states from raising taxes on alcohol. A study found that alcohol use and acute alcohol-related deaths declined following the introduction of Living Without Alcohol and the levy; acute deaths stabilized once the levy was removed despite the project continuing (56–58).

Increased alcohol prices formed part of a strict anti-alcohol campaign in the former USSR, starting in 1985. Helped by a state monopoly, the campaign also reduced state alcohol production and outlet numbers, banned alcohol use in public, increased the alcohol purchasing age (to 21 years) and increased penalties for producing and selling homemade alcohol. In Moscow, state alcohol sales fell by 61% from 1984 to 1987, total alcohol consumption by 29%, violent deaths by 33% and alcohol-related violent deaths by 51% (from 1984 to 1985/1986). However, the campaign was unpopular and effectively ended in 1988. By 1992, market reforms had liberalized prices and trade,

and violent deaths increased dramatically. Given the wider social and political changes over this period, the increase in violent deaths was unlikely to be due to alcohol alone, but the temporal relationships between the changes in alcohol regulations and violence suggest that they were at least closely related (59,60).

#### 4.2.4 Addressing gender inequality

Programmes that address gender norms and equality early in life can prevent gender stereotypes from becoming ingrained in children.

Numerous school-based programmes have been developed to achieve this, aiming to increase knowledge of intimate partner violence, change gender stereotypes and norms and prevent dating violence. Evaluations suggest that programmes can influence knowledge and attitudes, but their effectiveness at reducing violence is less well established (61–63). However, positive results have been reported for the Safe Dates programme in the United States of America. Safe Dates is a school and community-based initiative targeting students aged 13–15 years. Although not directly aimed at addressing gender inequality, it covers related topics (such as addressing gender stereotypes) within a wider programme. It includes a 10-session educational curriculum, a theatre production, a poster contest, community service provider training and support for affected young people. Evaluation found that, compared with controls, Safe Dates participants reported less mental abuse, sexual violence and perpetration of violence against their dating partner one month after the programme ended (64) and four years later (65).

In Canada, the Youth Relationship Project is a community-based intervention that targets at-risk 14- to 16-year-olds. It promotes non-aggressive conflict resolution and addresses gender-based role expectancies using an interactive programme including guest speakers, videos, behaviour rehearsal and social action. Evaluation found that the programme reduced physical and emotional abuse over a 16-month period following the intervention compared with controls (66).

#### 4.2.5 Changing social norms that support violence

Measures to change social norms aim to prevent violence by making it less socially acceptable. Many evaluated programmes focus on gender and sexual norms (see section 4.2.4). In the United States of America, for example, a one-hour programme showed a video to male undergraduates that described a rape situation, taught basic skills to help a woman recover from rape and encouraged men to communicate openly in sexual encounters and to help change societal norms that allowed rape. Evaluation found that, immediately after the programme, acceptance of the rape myth and the likelihood of raping (measured by a behavioural question) were lower for participants than before the programme, whereas no changes were found for controls. These declines were still present at a seven-month post-test. However, no changes were found in the levels of sexual coercion (67).

Focusing on violence more broadly, Resolve It, Solve It was a community-based antiviolence campaign led by high school students in the United States of America. Students acted as peer models and helped to develop campaign materials, including radio and television advertisements and printed media, focusing on three key themes: having respect for individual differences, resolving conflict and preventing bullying. The one-year campaign included presentations to schoolchildren and community events. Evaluation a few months after the project found mixed results. Students' use of physical (but not verbal) aggression against others declined among girls only, and experience of verbal (but not physical) victimization declined among boys only (68).

In some countries, concerns that violent video games increase violent norms and behaviour (69) have led to the use of legislation to control the age at which people can access these games. In Germany, for example, child protection law prescribes that an independent organization must examine the content of all computer games and label them with an appropriate age rating. The Pan European Game Information system provides a system for rating video game content to help parents make

informed decisions on buying games. Although industry compliance with rating systems can be high (70), little information is available on how voluntary rating systems or age legislation affect violent behaviour. However, interventions that aim to reduce children's media use and educate them about the harm of using age-inappropriate media have been found to reduce aggressive behaviour and improve school performance (71,72).

Section 4.3.2 includes bullying prevention programmes, which can address norms towards bullying.

#### 4.2.5.1 The social norms approach

The social norms approach assumes that people have mistaken perceptions of the behaviour and attitudes of others and aims to correct this. The Ringsted Experiment in Denmark used a social norms approach with schoolchildren 11–13 years old to change beliefs and misperceptions towards risk behaviour, particularly smoking. Before the intervention, children completed a questionnaire on their own risk behaviour and their beliefs about those of other young people. The questionnaire results were used to develop a four-hour intervention including discussions about the questionnaire findings, possible ways of reducing misperception and steps that children could take to change behaviour, including refraining from smoking.

A year later, compared with controls, participating children had corrected misperceptions and reduced personal involvement in risk behaviour, including substance use, crime, fighting, illegal knife-carrying and violent victimization. Reductions in actual smoking were not significant (73,74).

#### 4.2.6 Promoting equity in communities

Evidence is growing that factors including poor social policies and unfair economic arrangements create inequality both between and within countries (75–78) and that inequality between groups in society is an important risk factor for violence, mediated through poor social trust (79).

Information and evidence on programmes that directly address the link between inequality and violence among young people are scarce. However, as some of the key risk factors for violence among young people such as poor parenting, low academic achievement and poor social skills are also linked to inequality, measures to reduce inequality will probably have important positive effects on levels of violence (80).

### 4.3 Direct primary prevention approaches

#### 4.3.1 Reducing access to knives and sharp weapons

Preventing young people from accessing weapons can reduce their use in violent encounters. However, measures to reduce access to knives and other sharp weapons are complicated by their widespread use in everyday life. For example, kitchen knives are the most common type of knives used in homicides in Finland (81), and glasses and bottles used as weapons are typically accessed opportunistically in bars and nightclubs (82).



### 4.3.1.1 Legislation on knife sales

Establishing a minimum age at which young people can purchase knives can prevent children from accessing them. In the United Kingdom, selling knives to individuals younger than 18 years is illegal. To enforce this, test purchasing operations are undertaken in which underage volunteers attempt to buy knives to test retailers' compliance with the law. Retailers who sell knives to test purchasers can be addressed through warnings, fines or prosecution. There is little information on the effectiveness of test purchasing in reducing knife sales to children. Evidence from test purchasing activity to prevent alcohol sales to children in the United States of America suggests that immediate benefits can be seen in targeted premises, but these rapidly diminish, meaning that ongoing enforcement is needed (83).

In Scotland, a licensing system was introduced in June 2010 for knife retailers; any individual who operates a business dealing in knives other than domestic kitchen knives without a knife dealer's licence is committing a criminal offence (84).

### 4.3.1.2 Safer drinking vessels

Glassware can be a common weapon in violence. In the United Kingdom, local licensing legislation is often used to enforce the use of safer drinking vessels in pubs and nightclubs that experience violence. A study exploring the impact of toughened glassware (meant to have higher impact resistance than standard glassware) in drinking premises found quality control issues in the toughened glassware; when tested, this actually had lower impact resistance than standard glassware and its use led to more injuries among bar staff (85). More recently, improvements in the quality of polycarbonate glassware (strong plastic) have led to these being more widely used. A study exploring the effects of replacing standard glassware with polycarbonate glassware in drinking premises suggested that this had some benefits in preventing injury, but findings were limited by the small study size (86). However, this and other

studies have shown that the use of polycarbonate glassware can increase perceptions of safety among both personnel and customers (86,87).

## 4.3.2 Creating safe school environments

Safe school environments are critical in both preventing violence among young people and promoting academic achievement. Feeling unsafe in school can prevent children from attending and can encourage them to carry weapons to school for self-protection.

### 4.3.2.1 Programmes for preventing bullying

School-based programmes can be effective in preventing bullying. The Olweus Bullying Prevention Program, developed in Norway, takes a whole-school approach that includes the implementation of clear school rules and management structures regarding bullying, training for school staff, a classroom curriculum for students, awareness-raising material for parents, measures to improve the physical school environment and the use of evaluation tools (88). An evaluation of the programme after it was implemented nationally in Norway found reductions in the proportion of children who reported being victims and perpetrators of bullying. In Oslo schools, the proportions of students who reported being bullied and bullying others declined by 40% and 51% respectively between 2001 and 2006 (88). Versions of the Olweus Program have been implemented in many different countries including Australia, Lithuania, the Netherlands, the United Kingdom and the United States of America (89).

Another example of a successful European anti-bullying programme is KiVa in Finland. KiVa shares many features with other anti-bullying programmes, including measures to influence norms regarding bullying and to improve how schools deal with bullying. It has unique features, including using the Internet and virtual learning environments (such as an anti-bullying computer game) and focusing on the role of bystanders. Primary and lower-secondary schools in Finland have enthusiastically received KiVa, and 75%

are currently implementing it. Evaluation of the programme found that it positively affected each of nine forms of being bullied that were assessed, including physical victimization and cybervictimization (Salmivalli C, Kärnä A, Poskiparta E. Counteracting bullying in Finland: the KiVa program and its effects on different forms of being bullied, submitted) (90).

#### 4.3.2.2 Safer school partnerships

In the United Kingdom, safer school partnerships address a range of behavioural issues in and around school settings, including violence among young people. Each participating school has a dedicated police officer based at the school, who works with school staff and other agencies to reduce victimization, crime and antisocial behaviour; to work with children most at risk of becoming victims or offenders; to create whole-school approaches to behaviour and discipline; to ensure the full-time education of young offenders; and to create safer learning environments (91). Evaluation of safer school partnerships has been limited by poor data, yet some positive effects have been reported on truancy, victimization and perceptions of safety (92,93).

#### 4.3.2.3 Weapon-detection systems

Some schools in the United States of America and elsewhere use weapon-detection systems (such as metal detectors) to detect weapons and prevent them from being brought into schools. Although establishing the effectiveness of these systems requires further research, some positive benefits have been reported, including the confiscation of weapons, increased school attendance and making students feel more secure at school. However, these methods also have the potential to stigmatize the students who are searched and create anxiety or intimidation through the presence of security staff (94). Further, weapon-detection systems have been criticized for their high implementation costs.

### 4.3.3 Managing drinking environments

Since much alcohol-related violence occurs in and around bars and nightclubs, measures to manage

drinking environments can help reduce violence (95). Programmes that implement a range of measures through community partnerships have reported success in reducing violent crime (96), arguments and verbal abuse (97) and assault injuries (98).

In Sweden, the STAD (Stockholm Prevents Alcohol and Drug Problems) project forged a partnership including representatives of the licensing board, police, city council, health services, trade unions and owners of licensed premises in the city. Through this, numerous interventions were implemented, including training in responsible service for bar staff, training for door supervisors, house policies for licensed premises and strict enforcement of licensing legislation. Evaluation of the intervention (up to 2000) found that violent crimes decreased by 29% during the intervention period (96). Cost-effectiveness analysis estimated that the programme saved €39 for every €1 invested (99).

In Cardiff, United Kingdom, the TASC (Tackling Alcohol-related Street Crime) project used a similar approach, implementing measures including: risk assessment for licensed premises; training for bar and door staff; enforcing licensing legislation; using safer drinking vessels; supporting victims of violence; and mass-media campaigns. The project was informed through the use of multiagency data, including data from emergency departments (see section 4.5). Evaluation found some evidence for a reduction in violence, with benefits predominantly in and around high-risk venues subjected to intensive police enforcement (100). A key barrier to the project's success was its inability to encourage partners to adopt a broader approach to reducing alcohol-related problems, such as limiting the growth in the number of alcohol retail outlets (see section 4.2.3).



Specific measures to reduce knife-carrying in nightlife settings include the use of weapon-detection systems, such as metal detectors, including “knife arches”. The effectiveness of these types of measures is unknown. Access to glassware, which can be used as a weapon, can also be reduced by using safer drinking vessels (see section 4.3.1). Local legislation to prevent drinking vessels from being removed from bars and nightclubs and to prevent people from drinking alcohol in public places can also help reduce the amount of glass littering the streets, where it can be picked up and used as a weapon (101).

#### 4.3.4 Urban design strategies

Young people in urban areas can be at increased risk of violence, while rapidly urbanizing areas can experience a convergence of risk factors, including overcrowded living conditions, limited service coverage, perceptions of inequality across groups and young people frustrated by a lack of social and economic opportunities (102). Consequently, careful and effective environmental design can reduce opportunities for crime and fear of crime (103). The Safer Cities Programme of the United Nations Human Settlements Programme (UN-HABITAT) aims to promote good urban city governance by targeting preventing crime through environmental design, social prevention and improved forms of justice (104). The main aims are to build the capacity of cities to address urban insecurity and contribute to establishing a culture

of prevention. In 2007, the programme awarded the Habitat Scroll of Honour to the Stavropol City Administration in the Russian Federation, for reducing crime and ethnic tensions while improving employment, health and economic prospects across the population (Box 4.1).

Although the experience in Stavropol cannot necessarily be generalized across cities in the European Region, environmental design can be an important feature of preventing violence in any setting. For example, studies have highlighted the importance of green space in influencing health and well-being. A study from the United States of America found that public housing residents in inner-city urban areas with grass and trees nearby reported less violence than those in dwellings without nearby natural areas (107).

Modifying the environment in urban areas is another important feature of situational crime prevention. This aims to reduce opportunities for crime by focusing on the settings in which crimes occur and the risks of committing crime in such settings rather than on the person committing the crime. Common features include improving street lighting and using closed-circuit television cameras. Improving street lighting has been shown to reduce crime by 20% compared with control sites, but effects are more consistent for property crime than violent crime (108). Closed-circuit television cameras have small effects on vehicle crimes but no effects on violent crime (109). It has

#### Box 4.1. Developing a safer city in Stavropol, Russian Federation

In the 1990s, the City of Stavropol (population 360 000) faced increasing ethnic tensions and conflicts, experiencing a range of social and economic problems exacerbated by rapid migration from neighbouring conflict zones. To prevent conflict worsening, the city joined the WHO European Healthy Cities Network (105) and established a project entitled A Safe City Is a Just City. The project has implemented a range of measures to prevent conflict and terrorism, improve the physical environment and promote social equality and cohesion. These include enhancing cooperation between law enforcement agencies and the local administration, controlling entry points to the city, improving transport and traffic safety, introducing security cameras at key locations, resolving social conflicts, implementing assistance programmes for socially vulnerable groups, improving health care, implementing drug and alcohol prevention programmes for young people and implementing preventive training for professionals. The project features strong community engagement and uses data to inform and monitor its development. Between 2000 and 2006, the number of interpersonal crimes recorded in the city more than halved, while those committed by young people declined from 817 to 158 (106).



been suggested that situational crime prevention measures may have fewer effects on violent crime than on acquisitive crime, as the emotional states that lead to violence (such as anger) can affect offenders' perceptions of the consequences of their actions, as can alcohol use, which is a common feature of violence (110).

### 4.3.5 Social marketing, mass-media and education programmes

Social marketing, mass-media and education programmes are widely used to raise awareness of the effects of violence and discourage weapon-carrying. However, little evidence supports their effectiveness as stand-alone interventions in preventing violence.

#### 4.3.5.1 Social marketing and mass-media campaigns

Social marketing campaigns are society-wide advertising campaigns that aim to raise awareness of problem behaviour and motivate healthy behaviour. A variety of mass media are used to disseminate campaign messages (such as television, radio and posters). In the United Kingdom, an anti-knife campaign ran in 2008 that educated the public about the effects of knife-related crime. Evaluation focused on the opinions of young people aged 11–19 years, reporting that 32% thought the campaign would deter people from carrying knives but 48% thought it would have no effect. Further, 62% reported that the campaign had made them more fearful of knife-related crime (111). The effects on actual levels of knife-carrying or stabbings were not measured.

In Liverpool, United Kingdom, the Crystal Clear campaign aimed to reduce glass-related violence, providing information on its consequences and risk reduction measures (such as safe disposal of drinking vessels) through posters, radio advertising and beer mats. The campaign was not conducted in isolation but built on a previous intervention that promoted the use of safer glassware and worked with licensees to prevent the removal of glassware from bars. Evaluation found reductions in glass-related injuries treated at emergency departments during the campaign period (112).

A social norms approach (see section 4.2.5) has been used in Denmark to correct misperceptions about knife-carrying in nightlife settings. A survey of 14- to 26-year-olds found that, although few had experienced knife-related violence, many were concerned about this when on a night out, and about one in ten had considered carrying a knife for self-protection. A guide on staying safe in nightlife and a web site (113) were developed to spread the message that knife-carrying and violence are less common than people think and to provide tools to help people avoid conflict in nightlife. The scheme has not been evaluated.

#### 4.3.5.2 Education programmes

Several education programmes to combat knife-related crime have been developed for young offenders or young people generally (114,115). For instance, in the United Kingdom, the Be Safe Project challenges students as to why they carry knives and uses workshops to educate about the legal repercussions of carrying and using knives as well as the health and wider social implications (114). There is little high-quality research on the effects of these types of programmes, and further evaluation is needed.

## 4.4 Secondary and tertiary approaches

### 4.4.1 Legislation and enforcement

Legislation can seek to control an individual's ability to carry knives and to detect and punish individuals who carry knives illegally. Most information on such measures stems from the United Kingdom, and the effects on preventing violence have not yet been measured.

#### 4.4.1.1 Strengthening legislation on purchasing and carrying knives

In the United Kingdom, carrying a knife or other sharp object in public without good reason is a criminal offence, and many types of knives (such as flick knives) and other offensive weapons have been banned (116). Since 2006, legislative changes have raised the minimum age for purchasing knives from 16 to 18 years, increased the maximum prison

sentence for knife possession from 2 to 4 years, given police greater powers to search individuals for knives, given teachers powers to search students for knives and added other types of knives (such as replica samurai swords) to the list of banned weapons. The effects of these measures on the prevalence of violence have not been tested.

#### 4.4.1.2 Enforcing legislation on knife-carrying

Increased enforcement of legislation prohibiting the carrying of knives and sale of knives to minors has been a major part of the efforts to reduce knife-related crime in England (see section 4.4.5). Between June 2008 and March 2009, the police seized more than 5000 offensive weapons during more than 250 000 stop-and-search procedures in 10 intervention areas under the Tackling Knives and Serious Youth Violence Action Programme, representing a 2% return (117). Stop-and-search techniques have potential to cause resentment, particularly if used more regularly against ethnic minority people than other people. For instance, in England and Wales in 2008–2009, black people were stopped and searched more than seven times as frequently per capita as white people (118). However, a review provided support for stop-and-search practices in the short term as a deterrent to knife-carrying (provided that they are conducted appropriately) while advocating longer-term preventive approaches (92).



#### 4.4.2 Knife amnesty

Knife amnesty is widely used in the United Kingdom to encourage individuals to surrender offensive weapons, but little long-term evidence indicates their effectiveness (119). For instance, in England and Wales, a national five-week knife amnesty ran in 2006, collecting almost 90 000 knives. The initiative was evaluated in London, where reductions in knife-enabled offences were reported at around five weeks after implementation. By eight weeks, however, offences had returned to pre-amnesty levels (120). A broader initiative was implemented in Strathclyde, Scotland in 1993. A knife amnesty was combined with a mass-media campaign, improved safety measures in drinking environments and communication with both knife retailers and young people. Again, serious stabbings presenting to a local emergency department declined up to the first 10 months but surpassed pre-initiative levels a year after the intervention (121). Although knife amnesty can help to raise awareness of the problem and may remove some weapons from circulation, the sheer number of knives available in homes and elsewhere limits their effectiveness (119).

#### 4.4.3 Problem-oriented policing

Problem-oriented policing identifies and examines a specific problem in a community and seeks to develop tailored solutions involving a range of local services (such as police, health services and social services). For example, Operation Ceasefire in Boston, United States of America, brought together a multi-agency partnership of criminal justice agencies, social services agencies and other agencies to address firearm-related homicide among young people. It used research and firearm tracing data to target police enforcement at firearm traffickers and violent gang members. Police adopted a zero-tolerance approach to violence and firearm-related offences and communicated this to gang members through meetings and outreach work. Gang members were also offered support in moving away from violence, including job referrals and access to social services. Evaluation found a significant reduction in homicide involving

young people, firearm assaults and police service call-outs for gunshots (122). Other researchers have highlighted limitations of the evaluations conducted on Operation Ceasefire (123,124), but studies on later programmes based on this strategy suggest that it offers at least short-term effectiveness in reducing gun-related crime (125–127).

The Boston model has been used to develop similar initiatives in the United Kingdom. For example, in Glasgow, Scotland, gang members were invited to a meeting with police and other partners at which they were told that violence would not be tolerated, given graphic accounts of the effects of violence by health professionals, victims and perpetrators and offered support to change their lifestyles, including help with education, employment, substance use and housing. The effects of the initiative on violence have not yet been established (128).

#### 4.4.4 Working with high-risk young people

Delinquent behaviour, gang membership and a history of arrest are key risk factors for violence among young people and violence involving knives. Measures that target high-risk young people to change their behaviour and divert them from future offending are important in breaking cycles of violence.

##### 4.4.4.1 Multisystemic therapy

Multisystemic therapy is an intensive family and community-based treatment intervention delivered to young people (typically aged 12–17 years) with serious antisocial and criminal behaviour. Multisystemic therapy identifies and addresses risk factors that are known to contribute to antisocial behaviour, such as the family environment, school problems and substance use, and aims to strengthen protective factors that reduce the risk of future offending. The main aim is to help parents to respond effectively to young people's behavioural problems and to help young people cope with family, peer, school and neighbourhood issues. Multisystemic therapy is based on evidence-based therapeutic techniques such as cognitive

behavioural therapy, behavioural parent training and pragmatic family therapies. Treatment is administered by a team of 3–4 highly qualified professionals and takes on average 3–5 months. Although the results have been inconsistent (129), in some instances multisystemic therapy has been shown to reduce violence, aggression and substance use among participants (130–133).

Studies of other family therapy interventions (such as brief strategic family therapy and functional family therapy) have also reported reductions in, for example, violent and criminal behaviour, anger and delinquency (134–137).

##### 4.4.4.2 Behaviour-change counselling

Behaviour-change counselling uses a brief one-to-one counselling session to motivate behaviour change. In the United States of America, a programme targeting 12- to 20-year-olds attending hospital with an injury focused on changing relevant risk behaviour (such as carrying a weapon, using seat-belts and drink-driving). Although positive changes were reported for some types of behaviour six months later (such as the use of seat belts), there was no effect on weapon-carrying (138). Behaviour change counselling in the form of a brief intervention for alcohol misuse has been used among both the victims of and the offenders in alcohol-related violence. Some studies have found reductions in alcohol-related injuries following brief interventions in emergency departments (139), yet few have measured the effects specifically on injuries caused by violence. A study exploring the effects of a brief alcohol intervention delivered to violent offenders in criminal justice settings in the United Kingdom found no effects on alcohol use or recidivism, although participants were themselves less likely to have presented at an emergency department with an injury of some type than controls (140).

##### 4.4.4.3 Youth inclusion programmes

In the United Kingdom, youth inclusion programmes engage children aged 8–17 years who are at high risk of crime in activities that enable them to learn

new skills, mix with peers and gain support with education and careers. The programmes operate in the most deprived areas, identifying the most vulnerable young people in each area through a risk assessment process that involves a range of different agencies. Although there was no control group for comparative purposes, evaluation of the programme found that involvement did not reduce the risk of arrest but at-risk young people who engaged in the programme were arrested less frequently than those who were not involved (141).

#### 4.4.4.4 Reducing recidivism

Young people who are incarcerated for violence often offend after their release (142). Although studies have not been limited to young people, cognitive behavioural therapy and other programmes implemented in prisons have shown positive effects on reducing further violent offending (such as in New Zealand (143) and the United States of America (144)). Upon release from prison, young offenders require ongoing support to ease their transition into society. This can involve mentoring, assistance with education, employment and housing, substance use treatment and broader family support. However, studies find that repeated, more intense forms of contact with youth justice agencies may be more damaging in the longer term than less intensive, more diversionary action, such as cautioning without formal intervention (145). Thus, a critical issue for young people convicted of violence is that sanctions should at the very least not increase the risk of recidivism.

Specific to knife-related violence, in England a Knife Crime Prevention Programme has been established for 10- to 17-year-olds convicted of knife-related crimes. The programme contains a set of modules covering attitudes towards knife-related crime, legislation on knives, the effects of knife-related violence, conflict management, personal safety and peer education with ex-offenders. The effects of the programme on recidivism have not been measured, although qualitative data suggest that it has some positive effects on young people's thinking (146).

#### 4.4.4.5 Gang intervention and prevention programmes

Globally, numerous strategies have been used to address gang violence, ranging from zero-tolerance enforcement activity to softer approaches focusing on education and providing diversionary activities (80). Evaluation suggests that zero-tolerance approaches have little effect and may even exacerbate problems (147), but there is also little evidence for other single-approach measures (148). However, multicomponent programmes that combine enforcement with social measures, such as Operation Ceasefire (see section 4.4.3), have shown some success. Although independent, high-quality evaluation is needed, the gang prevention and intervention model of the United States Office of Juvenile Justice and Delinquency Prevention has been tested at sites across the United States of America and reported some successful, although sometimes mixed, findings (149). The programme identifies five key strategies for tackling gang-related violence, including (1) community mobilization that engages local citizens in creating new opportunities for at-risk young people; (2) social intervention that provides services to at-risk young people and their families; (3) providing education, training and employment opportunities to at-risk young people; (4) implementing suppression activities and monitoring young people involved in gangs; and (5) organizational change and development to make the most effective use of resources.

Many gang intervention strategies have been used in countries in the European Region, especially in Scandinavia (150). The Stockholm Gang Intervention and Prevention Programme is working to develop and share effective practice in gang prevention activity and to facilitate collaboration between law enforcement agencies and research networks in the Region (151).

#### 4.4.4.6 Mentoring

Mentoring programmes partner vulnerable young people with a caring role model from outside their family, such as a teacher, community member or

older classmate, who engages with the young person regularly to provide advice, support and friendship. The widely used Big Brothers/Big Sisters programme provides both community-based and school-based mentoring to children aged 6–18 years. An evaluation of the community-based programme in the United States of America suggested that it improved school attendance, performance and relationships between children and parents and reduced antisocial behaviour compared with non-mentored peers (152). Evaluation of the school-based programme also found benefits in school performance, attendance and behaviour compared with non-mentored peers, but no out-of-school benefits were identified (153). Other mentoring programmes have also reported positive effects on bullying, physical fighting and feelings of depression (154). One study in the United States of America used a mentoring programme with adolescents aged 10–15 years presenting to an emergency department with assault injury. Here, the programme was associated with decreased physical aggression and misdemeanour activity in the past 30 days but had no effect on carrying a knife (155).

#### 4.4.5 Multicomponent strategies

Multicomponent projects combine a range of coordinated activities through multiagency partnerships. In the United States of America, a national initiative called Project Safe Neighborhoods has created partnerships between criminal justice and other agencies, including local governments, schools and social services. Based on approaches used elsewhere (such as Operation Ceasefire, see section 4.4.3), Project Safe Neighborhoods aims to reduce firearm violence through enforcement, deterrence and prevention (127). In Chicago, Project Safe Neighborhoods delivered a programme that included: law enforcement focusing on high-risk offenders; community- and school-based prevention programmes; community outreach and mass-media campaigns; and the creation of offender notification forums to increase communication between authorities and people involved in or on the verge of violent behaviour (156). Evaluation of the law enforcement strategies and offender notification

forums suggested that they reduced crime, including homicide, with the offender notification forums given the highest endorsement (157).

In England and Wales, the Tackling Knives and Serious Youth Violence Action Programme is a multicomponent programme led by the Home Office and police and involving a range of other sectors. Initiated in 2008 to address serious knife-related violence among young people, the Programme first focused on knife-related violence among 13- to 19-year-olds but later expanded to cover all serious violence among 13- to 24-year-olds, with implementation devolved from police to local community safety partnerships in April 2009. The Programme targets areas with high levels of violence among young people and operates at the national and local levels. The participating police forces receive funding to analyse and address local problems, with resources split between enforcement, education, youth engagement and prevention and communication activities. Overall, components have included: strengthened legislation and controls on knife access and violent offenders; increased enforcement activity; improved sharing of data between the health sector and the police; investment in community services; a mass-media campaign on knife awareness; targeted work with young offenders; and providing positive activities for young people. Findings from monitoring of the first stage of the Programme showed promise, with some reductions in the number of young people caught carrying weapons, recorded violent offences and robberies that involved sharp instruments against young victims and young people admitted to hospital with stabbing-related injuries (117,158). Nevertheless, the lack of statistically robust comparison groups means that change cannot be attributed directly to the programme.

#### 4.4.6 Effective trauma services

The level of trauma care can affect health outcomes for individuals suffering serious injuries, including violent injuries. Mortality through serious injuries can be significantly reduced when trauma services are managed effectively. In the United States of

America, for example, studies have shown that mortality among people receiving trauma care can be reduced by 15–20% when they are treated in specialized trauma centres and systems (159,160). Improvements in managing, organizing and delivering of trauma care can improve survival and morbidity by enabling seriously injured patients to receive care in facilities that have the appropriate resources and skills to treat them. Improvements are often achieved through strategic planning of systems for trauma management and ongoing verification of these services through inspections.

The WHO Essential Trauma Care Project was established to identify and promote inexpensive ways of strengthening trauma treatment at the global level and has published *Guidelines for essential trauma care* (161). These provide details of trauma services considered essential to preventing death and disability in injured people, ensuring the appropriate and prompt treatment of life-threatening and potentially disabling injuries and minimizing pain and mental suffering. They describe the physical and human resources required to provide essential trauma care, improve performance, carry out inspection and integrate systems for trauma management.



#### 4.4.7 Services for victims

In addition to injury, victims of violence can suffer life-long physical, mental, emotional and social problems. They can also be at increased risk of being involved in violence later in life.

Consequently, interventions to provide effective care and support to victims of violence are critical to protect their future health and well-being and break cycles of violence. Few studies have explored the effectiveness of support services specifically for young victims of violence perpetrated by young people or by using a knife. However, the evidence for services covering victims of other forms of violence is promising, if limited (162). For example, the use of early trauma-focused cognitive behavioural therapy has shown evidence of effectiveness in preventing chronic post-traumatic stress disorder among victims of violence (163,164).

Advocacy programmes that offer advice, support and counselling to victims of violence have also reported some success in improving social support for and the quality of life of victims and reducing repeat victimization, especially following intimate partner violence (165). For victims of sexual violence, specialist sexual assault nurse examiners in several countries (such as Canada, the United Kingdom and the United States of America) conduct health examinations, provide counselling, support and referral, collect forensic evidence and provide evidence in court. The use of sexual assault nurse examiners has been found to be mentally beneficial, to provide appropriate health care and to facilitate the prosecution of rape cases, including ones involving young victims (166,167).

Measures to support victims through the criminal justice system can be critical in achieving appropriate justice for victims of violence. Such measures are an important part of advocacy programmes and can be supported by using specialist courtroom measures such as screens to prevent defendants from seeing witnesses, enabling victims to give evidence via video link, establishing clear routes through courts for victims and witnesses to prevent them from meeting defendants and removing court attire (such as wigs and gowns) to prevent intimidation. An evaluation of specialist courtroom measures used with vulnerable and intimidated witnesses in England and Wales found that one third of witnesses stated that they would not have been willing or able to give evidence in the absence of such measures (168).

## 4.5 Developing intelligence for prevention: the role of health data

Effectively preventing violence among young people requires understanding the problem well, including the individuals and communities that are most at risk and where violence occurs and why. Several data sources can contribute to this understanding, including those from criminal justice agencies, health services, local authorities and public surveys. Many interventions to address violence among young people and violence involving knives rely on police statistics, but violence is often not reported to the police (169). However, victims often require health care, and health data can therefore be critical in targeting interventions and monitoring their impact.

Most countries in the European Region have systematic methods of recording hospital admissions using internationally standardized disease classifications. Although this provides a valuable source of information on serious violence, hospital admissions only represent the tip of the iceberg.

In the United Kingdom, for each individual admitted to hospital with a violent injury, an estimated 10 receive emergency department treatment (170). Thus, emergency departments across the United Kingdom are encouraged to collect data on violence and share this with police and other agencies working to prevent violence. The use of emergency department data can help identify at-risk areas and groups to inform the targeting of interventions and be used as an independent measure for evaluating the effectiveness of prevention. Examples of emergency department data-sharing models in the United Kingdom include the Cardiff model and the Trauma and Injury Intelligence Group injury surveillance system.

### 4.5.1 Cardiff model

In Cardiff, emergency department reception staff members collect information from everyone with an assault injury, including assault location, time and date of the incident and the weapon of attack. The

data are shared with local partners and combined with other data sources, such as police data, to develop a more comprehensive picture of violence. The addition of emergency department data has helped local partners to identify local violence hotspots and has assisted in targeting resources to tackle and prevent violence, such as identifying high-risk premises for increased enforcement and redeploying police to hotspot areas (see section 4.3.3). Following the implementation of such measures, assault attendance at the Cardiff emergency department decreased by 35% between 2000 and 2005 versus a decrease of 18% across England and Wales over the same period (171).

### 4.5.2 Trauma and Injury Intelligence Group injury surveillance system

The Trauma and Injury Intelligence Group injury surveillance system in North West England collects and shares injury data from emergency departments across the region in addition to that from the ambulance and fire and rescue services (172). The Trauma and Injury Intelligence Group works with emergency departments to develop routine collection of data on violence and alcohol-related injuries, including assault location, the time and date of the attack, the weapon of attack, whether the individual had consumed alcohol before their attack and the location of their last drink. Emergency departments routinely provide data to Trauma and Injury Intelligence Group officers, who analyse data and produce regular reports for emergency departments and other local partners. The data are used locally to develop, target and monitor strategies for preventing violence. For example, in Wirral, Trauma and Injury Intelligence Group data identified a 40% reduction in alcohol-related violence between 2004–2005 and 2008–2009 following local interventions such as targeted enforcement in drinking premises.

In Liverpool, emergency department data on assault locations have been successfully used to inform police operations over key periods associated with violence, such as during the Christmas holiday (173).

## 4.6 Conclusions

Despite a wide range of intervention approaches and their assessment through different types of evaluation, overall good evidence indicates that violence among young people can be prevented. The evidence base is much stronger for interventions that adopt a public health rather than criminal justice approach and for those that reduce risk factors and strengthen protective factors among young people early in life than for measures that seek to reduce violent behaviour once it has already emerged. However, no programme can entirely prevent violence or the future development of violence among individuals. Interventions in later life are therefore also required, despite the high costs of implementation. Parenting programmes and programmes that develop children's life and social skills in early childhood reduce aggressive and violent behaviour in both the short and longer term. Good evidence indicates the cost-effectiveness for these programmes, and they should be implemented in view of the high costs to society. Most programmes require multiagency, multidisciplinary and multisectoral collaboration. As much of the evidence is from North America, implementation of programmes should be undertaken with an evaluative framework, and improving the evidence base remains a key priority.

### Key messages for policy-makers

- Youth and knife violence can be prevented.
- The evidence supporting interventions that reduce risk factors and strengthen protective factors in young people early in life is much stronger than that for measures that seek to reduce violent behaviour once it has already emerged.
- Effective early interventions are also cost effective, and can have much broader benefits including improved school performance, reduced substance use and crime, and better employment outcomes.
- More evaluative research is needed in Europe including studying the cost benefits of youth violence prevention measures.

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# 5. ADDRESSING VIOLENCE

## AMONG YOUNG PEOPLE IN THE EUROPEAN REGION: OPPORTUNITIES FOR ACTION

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This chapter summarizes some of the key findings, identifies some common themes in the Region and suggests key actions for policy-makers, practitioners and advocates from various sectors.

### 5.1 An assessment of the current situation

Violence among young people has its root causes in family, society, culture and economic conditions and persists in many countries in the WHO European Region.

#### 5.1.1 Why interpersonal violence among young people matters in the Region

Interpersonal violence takes an enormous toll on the lives of young people in the Region, and every year more than 15 000 young people lose their lives from interpersonal violence, amounting to more than 40 deaths a day. Of these deaths, an estimated 40% are enabled by knives or sharp implements. Adding to the burden of deaths are the 300 000 young people admitted to hospital annually due to injuries from interpersonal violence and the millions more who seek help and support from health, justice, social, occupational and educational services in the Region. The costs of services and those due to lost productivity due to ill health and incarceration are enormous, as are the costs borne by families whose lives are shattered by the loss of loved ones.



Not only may young victims be severely injured, but interpersonal violence also interferes with their psychosocial and emotional development and increases the likelihood of anxiety, depression and suicidal behaviour (1). Violence is a self-perpetuating cycle, and victims of violence are at increased risk of being involved in further violence in later life both as victims and perpetrators (2–4). Evidence also shows that violence increases risk-taking behaviour such as smoking and alcohol misuse, which worsen health outcomes in adulthood, such as by increasing the risk of cancer and cardiovascular diseases (1,5). Longitudinal studies are needed in the European Region to better understand the longer-term health, social and economic costs of violence.

Within the Region, concern is growing about violence among young people and especially about knife-related violence. A recent survey of focal people for preventing violence from the health ministries of 35 countries confirmed this interest across the Region (Table 5.1).

#### 5.1.2 Inequality persists in the European Region

The likelihood of a young person dying from homicide is almost seven times higher in low- and middle-income countries than in high-income countries in the WHO European Region. The difference between the country with the highest homicide rate among young people, the Russian Federation, and the one with the lowest rate, Germany, is 34-fold. This inequality is also reflected in how countries respond to the problem of interpersonal violence in the Region. Countries can therefore learn from others' successes and failures, and examples of evidence-based good practice can be transferred and adapted to different settings.



**Table 5.1. Survey results of concern at health ministries regarding knife-related violence in 35 responding countries in the WHO European Region**

Country	Is violence involving knives a problem in your country?	Is violence involving knives a current political priority? <sup>1</sup>	Are data available on knife-related violence in your country? <sup>2</sup>	Are there any specific interventions in place to prevent knife-related violence? <sup>2</sup>	Are you interested in more information on knife-related violence? <sup>2</sup>	
Denmark	No answer	✓✓	✓	✓	✓	
Albania	It is already a big problem	✓	×	×	✓	
Finland		×	✓	×	×	
Ireland		✓✓	✓	✓	✓	
Russian Federation		×	×	×	✓	
United Kingdom		✓✓	✓	✓	✓	
Belgium	It is a growing problem	×	×	×	✓	
Hungary		×	×	✓	✓	
Iceland		×	✓	×	✓	
Israel		×	✓	–	✓	
Italy		×	×	×	✓	
Lithuania		×	×	×	✓	
The former Yugoslav Republic of Macedonia		✓	✓	✓	✓	
Uzbekistan		×	✓	×	✓	
Spain		Not any more <sup>3</sup>	×	×	×	×
Armenia		It occurs, but it is not a problem	×	✓	×	✓
Austria	×		×	×	×	
Azerbaijan	×		×	×	✓	
Bosnia and Herzegovina	×		×	×	✓	
Bulgaria	×		✓	✓	✓	
Cyprus	✓		×	×	✓	
Greece	✓		×	×	✓	
Hungary	×		×	×	×	
Israel	×		×	×	✓	
Kyrgyzstan	✓		×	×	✓	
Latvia	×		✓	×	✓	
Malta	×		✓	×	✓	
Montenegro	×		✓	×	✓	
Poland	✓		×	×	✓	
Romania	✓		✓	×	✓	
Slovenia	×		×	×	×	
Andorra	It is not a problem at all		×	✓	×	×
San Marino			×	×	×	×
Slovakia			×	×	×	×

<sup>1</sup> ✓✓: yes, a high priority; ✓: yes, a low priority; ×: no.

<sup>2</sup> ✓: yes; ×: no; –: no answer.

<sup>3</sup> It used to be a problem, but it is now reduced.

Source: unpublished data from a WHO Regional Office for Europe survey on knife-related violence, 2010.

The social determinants of health differ greatly between and within the countries in the Region (6). The evidence gathered here shows that young people from socially disadvantaged backgrounds are more likely to experience fatal and nonfatal interpersonal violence. Children and adolescents living in families with social deprivation have increased exposure to family conflict and violence within the home. Young people living in deprived areas have greater exposure to violence, have greater fear of violence, lack social support and see violence as a normal way of resolving conflict or carrying out punishment. Communities with high levels of violence may lose out on scarce resources diverted to criminal justice systems away from services such as education but also on public health and social services because of concerns of staff safety. Violence may also hinder health-promoting activities such as physical exercise. Living in societies with greater income inequality, lower social trust and poorer societal resources is also associated with greater violence (7,8). Whereas social determinants are key for violence developing, violence itself perpetuates and deepens health, social and economic inequality. Resources need to be targeted to reduce inequity in health and to strive for greater social justice (6).

### 5.1.3 A period of rapid change in the Region

The last 30 years have been associated with great political, economic and social change in the European Region and with the challenges of rapid globalization (6,9-12). Countries in the eastern part of the Region have changed rapidly to market economies, and the infrastructure and regulatory systems have been under tremendous strain. Social support networks and social capital have been eroded in many countries, leaving children and adolescents vulnerable. The transition has been associated with marked rises in interpersonal violence and homicide in some countries. This is also true at the subnational level: for example, state social security dissolved in the Russian Federation, and the regions that experienced the highest unemployment experienced the highest rates of homicide (13). Deregulation and the

increased consumption of alcohol in parts of the Region have also led to increases in alcohol-related violence (14). In the current economic downturn, there is concern that lower levels of public spending on social welfare may adversely affect health and increase violence (9).

The Region has also had large population movements. A combination of asylum-seekers, economic migrants and travellers may be vulnerable to new ways of life in unfamiliar societies, where they may live in deprived urban neighbourhoods in conditions of economic poverty compared to native populations. Homicide rates among young migrants have been reported to be higher than in indigenous populations (15), although much of this effect is due to socioeconomic deprivation (16).



### 5.1.4 Young people are vulnerable to violence

This report has emphasized the vulnerability of young people to being a victim or perpetrator of violence. This is particularly true of young men, who are at greater risk of being a victim of homicide than young women, who are at greater risk of being a victim of sexual violence. Adolescent development involves changing relations between the individual

and the family, institutions and society. This may put adolescents at risk related to alcohol use, drug use, exclusion from mainstream education, bullying and violence. Poverty and social exclusion exacerbate these risks (17). Adversity in childhood and exposure to violence in the home, school and community and to risk factors such as alcohol and drug use contribute to young people being involved in violence (1,5,18). To protect young people, a commitment is needed to a preventive approach to tackle the root causes of violence and enable young people to live free from violence. This necessarily involves various sectors such as health, education, labour and justice. Preventing these root causes will act to reduce the carrying of knives and other weapons among young people. Resources need to be targeted to reduce inequity in health, to strive for social justice and to protect the rights of vulnerable people.



### 5.1.5 Alcohol has a leading role in precipitating violence among young people in the Region

Globalization and deregulation in many countries have led to an increasing number of young people who drink alcohol at an early age, drink regularly and drink to excess (19–22). This behaviour increases the likelihood of a young person being either a victim or perpetrator of violence. In the eastern part of the European Region, deregulation and the freer availability of alcohol have been associated with sharp increases in alcohol intake among young people (10–12). Changes in the volumes and patterns of alcohol consumption have been noted among young people throughout the Region, with increases in binge-drinking (20). This is a risk factor for young people being a victim or

perpetrator of violence. For example, steep rises in homicide rates have been found at the times of greatest change, and these are also linked to increased alcohol consumption levels in the Russian Federation (14,23). Alcohol use is strongly associated with violence and weapon-carrying among young people. The introduction of minimum pricing, regulation and enforcement to reduce access to alcohol and its misuse are important measures, as is modifying drinking environments to make them safer (24).



### 5.1.6 Violence among young people is preventable

The report presents the available facts on the burden and risk factors and argues that young people are vulnerable, as the causes of violence are linked to their early development, cultural and social determinants, access to alcohol and drugs and inadequate social support networks. Evidence is presented on how long-standing benefits may be gained through cost-effective programmes that ameliorate risks and boost protective factors to prevent violence and the carrying of weapons (25). Such approaches are more cost-effective than incarceration. The report draws from the experience of several countries that have developed programmes resulting in great gains in safety through sustained and systematic commitment.

This report promotes the public health approach endorsed by the *World report on violence and health* and emphasizes primary prevention to avert violence rather than coping with its effects (1). It argues that equal importance should be given to investing in primary prevention compared with

the criminal justice response, which is essential for limiting the damage from violence through control and deterrence (1,26,27).

## 5.2 The way forward

### 5.2.1 The need for a life-course approach

Preventing violence among young people requires systematic programming to improve parenting and life skills and to reduce access to alcohol and weapons while addressing cultural norms and upstream issues such as deprivation and inequality. This report argues for a life-course approach given the strong evidence linking childhood adversity and being involved in violence and weapon-carrying as young people. As highlighted in Chapter 4, investing in programmes that target child development is cost effective, including parenting programmes and programmes for life and social skills training. These early interventions also act to improve school performance and reduce substance misuse and achieve better health and employment outcomes. Further, the cycle of violence can be self-perpetuating and, left unchecked, can breed violence in future generations and contribute to the normalization of violence in society (Box 5.1).

#### **Box 5.1. The costs of doing nothing are high**

Unless tackled, violence among young people will:

- continue to shed young lives in their prime;
- affect the physical and mental health of young people and the quality of their lives;
- give rise to diseases in adulthood, which can measurably shorten life expectancy and greatly increase health costs;
- negatively affect social capital, communities, economic growth and development;
- further embed inequality in health and social inequality;
- breed the next generation of violence and ingrain normalization of violence in society; and
- continue to drain scarce resources from society.

### 5.2.1 The potential to save lives

This report distils the evidence for what works in preventing violence among young people.

Many countries in the Region have become among the safest in the world by committing to a systematic and coordinated approach to prevention. Implementing evidence-based approaches would save many thousands of young peoples' lives every year in the Region.

If all countries had the same homicide rates as the country with the lowest in the Region, the lives of 13 400 of the 14 900 young people dying annually from homicide in the Region (90%) could potentially be saved, a goal worth striving for (see Annex 2 for methods).

### 5.2.3 Intersectoral action is required

Complex interactions between biological, social, cultural and economic factors cause violence among young people. A commitment to a preventive approach requires tackling the root causes of violence through intersectoral action. This requires that governments acknowledge and take ownership of the problem of violence among young people, which is a shared problem that cuts across the activity areas of many different sectors (Box 5.2).

Collaboration across sectors is therefore essential to design and deliver effective policies and programmes (28). To ensure this, the health sector needs to systematically engage with the other sectors, including justice, social protection and welfare, education, labour, transport and environment and city and regional planning. Programmes and policies need to be effectively coordinated to address the wider determinants of violent behaviour among young people. Policies need to be based on the existing wide body of evidence for preventing violence. In many countries, interagency collaboration is hampered by the silo mentality, poor communication and different styles of operation (29), and this needs to be overcome.

### Box 5.2. The Internal Security Programme and preventing violence in Finland

In Finland, the government has developed a comprehensive Internal Security Programme. The Ministry of the Interior has coordinated the work, which is a cooperative effort between the key ministries (Justice, Social and Health Affairs, Education, Environment and Defence) and other actors, such as local governments and nongovernmental organizations. Although the Internal Security Programme is wide in scope – covering issues from preventing major accidents and environmental disasters to improving home safety – preventing violent crime is one of the key targets. The Finnish National Council for Crime Prevention led on developing a comprehensive national programme for reducing violence. It contains about 150 measures and recommendations divided into sections, one of which is devoted to preventing violence perpetrated against children and young people and violence perpetrated by young people. It also includes sections on preventing alcohol-related violence, violence perpetrated against women and violence in the workplace. Key measures include supporting parenting, enhancing child protection, detecting problems early, targeting services for families and children at risk, providing measures aimed at enabling parents to spend more time with their children and keeping child-care and school settings safe for children. Preventing bullying was a key target as well as training for detecting violence perpetrated against children. The second Internal Security Programme has highlighted preventing violence, and abuse of children and adolescents is one of the key areas.

Source: personal communication, Jukka-Pekka Takala, National Council for Crime Prevention, Ministry of Justice, Helsinki, Finland, 2010.



#### 5.2.4 Linking national policy to the momentum of global and European Region policy initiatives

World Health Assembly resolutions WHA49.25 on the prevention of violence: a public health priority and WHA56.24 on implementing the recommendations of the *World report on violence and health* called on Member States to take such action (30). In the European Region, the WHO Regional Committee for Europe has adopted resolution RC55/R9 on the prevention of injuries (31), and the Council of the European Union has passed a recommendation on the prevention of injuries and the promotion of safety that singles out young people as one of the groups requiring

attention (32). These call on the health sector to take the lead in coordinating a multisectoral response to preventing violence. A survey of 47 European Member States reported that these policies have been a catalyst for promoting change in 35 (74%) respondent countries for preventing both injuries and violence (33). However, only 29 (62%) countries reported having national policies specifically for preventing violence among young people, although this number increased from the previous year. Most countries reported implementing evidence-based interventions for preventing violence among young people, but most countries implemented these locally (median 89% for the seven types of programmes) rather than nationwide (median 14%), confirming that programmes need to be scaled up to prevent violence among young people (Fig. 9 in Annex 1) (33).

The United Nations Convention on the Rights of the Child underlines the social responsibility to protect people up to the age of 18 years and to provide them with appropriate support and services and supports their right to a safe environment free from violence. World Health Assembly resolution WHA62.14 on reducing health inequities through action on the social determinants of health urges Member States to do more to improve inequity

in health, including that due to inequality in interpersonal violence (34). This underpins the importance of the life-course approach and the need to start early in childhood. Further, the Tallinn Charter: Health Systems for Health and Wealth underpins the central role of health systems in promoting equity, recognizing the stewardship role in a multisectoral response to prevention (35).

### 5.3 Key action points for the European Region

This report recommends eight action points for developing programmes for preventing violence among young people. These are in synergy with European Region and global policy initiatives.

**1. Develop and implement national policies and plans for preventing violence among young people that involve other sectors.** Health ministries need to take a leadership role in ensuring that national policies and plans for preventing violence among young people involve other ministries such as justice, education, social welfare, transport, occupation, environment and local planning. Efforts should be multidisciplinary, with broad representation from other sectors of government, and involve nongovernmental organizations and the public, including young people. Strategies should take care of the needs of young people and especially promote preventive approaches to tackling the root causes of violence. A good starting-point would be to assess violence among young people nationally to determine the prevalence, nature and causes of violence among young people and existing relevant policies, laws and regulations and to identify stakeholders and available resources (Box 5.3) (28). Governance mechanisms need to be created to ensure intersectoral action on violence among young people, with sustained high-level backing in ministries and the power to ensure sector-specific alignment with the action plan and sustained budgetary allocations. The prevention of violence needs to be integrated into educational and social policies. Monitoring and evaluation are also essential. An example of one such approach is that of the Scottish Violence Prevention Unit (Box 5.4) (36).

**2. Take action: implement evidence-based primary prevention.** Evidence is sufficient to start taking action for the primary prevention of violence among young people. This action needs to take into account the national and local needs, be adapted to these and evaluated. Key approaches should address the root causes of violence through interventions on parenting, life skills, access to alcohol and weapons, modifying settings such as preventing school bullying and making drinking environments safer while addressing cultural norms and upstream issues such as deprivation and inequality. These programmes require intersectoral coordination and action. Policies and programmes should be scaled up that can immediately affect the problem (such as problem-oriented policing to target high-risk drinking environments) despite not being easily sustainable in producing long-term reductions in violence. Programmes that have delayed effects on rates of perpetration and victimization (such as social and life-skills training for young children) are likely to be more sustainable and reduce risk in the long term.

**3. Strengthen responses for victims.** In addition to addressing systemic responses for primary prevention, high-quality services need to be provided for victims of violence. Health systems need to be strengthened to provide high-quality emergency medical services and to support and rehabilitate victims to address both the physical and mental effects of violence, with a holistic approach to improve coordination between the different sectors. Better recognition of the signs of violence, referral to appropriate services, providing social support and protection and preventing repeat perpetration and victimization are all essential to improving the quality of services from the health, justice, education and social sectors. Effective services will also reduce retaliatory violence and repeating the cycle of violence.

**4. Build capacity and exchange best practices.** An essential part of an adequate health system response is to ensure a supply of trained and experienced personnel who are well versed with both prevention and care. Curricula

### **Box 5.3. A six-step framework for implementing policies and programmes for preventing violence**

#### Step 1. Get started

- Identify key partners and develop partnerships with them
- Develop a shared vision
- Develop skills and capacity in leadership and advocacy

#### Step 2. Define and describe the nature of the problem

- Define the nature of, magnitude of, effects of and risk factors for violence among young people using national and local statistics

#### Step 3. Identify potentially effective programmes with reference to the nature of the problem and the evidence base for prevention

#### Step 4. Develop policies and strategies

- Agree on a framework for joint policy and strategy development
- Give priority to effective programmes

#### Step 5. Create an action plan to ensure delivery

- Agree on the process and timetable for implementation
- Agree on and define the roles and responsibilities of partners
- Develop professional skills, undertake further training and establish effective networks

#### Step 6. Evaluate and share learning

- Plan and implement appropriate evaluation
- Learn – and then share evidence and promising practice

### **Box 5.4. Violence Reduction Unit in Scotland**

Since 2005, the Violence Reduction Unit in Scotland has brought together partners from across sectors to focus on a shared agenda around violence (36). Multisectoral collaboration is based on the premise that the consequences of violence affect all sectors – health, education, criminal justice, social welfare, community safety, housing and employment – and all have a role to play in preventing it. The role of the national centre of expertise on tackling violent crime includes designing and implementing intervention programmes, public awareness campaigns, monitoring developments, building partnerships, advocacy and strategic guidance. Originally established by the Strathclyde police and now with a national remit, the Violence Reduction Unit has championed that violence is preventable – not inevitable. Based on surveillance data and an effective communication strategy, the Violence Reduction Unit has raised awareness of the scale of the problem in Scotland among public, professional and political networks. This has catalysed political support across parties. The Violence Reduction Unit has built on evidence and experience, both locally and in other countries, to design and implement targeted interventions. Evaluation is a core component of programme delivery, and demonstrated effectiveness has proven a useful tool in maintaining support. A preventive public health approach guides the Violence Reduction Unit in its aim of sustainably reducing violence in Scotland. This includes primary, secondary and tertiary interventions such as an interagency community initiative on gangs, brief motivational interventions in health care settings, parenting programmes, problem-based policing as well as advocating on legislative issues such as sentencing for knife-enabled crimes and alcohol pricing. In leading and in supporting other agencies, in planning and in delivery, the Violence Reduction Unit example illustrates that multisectoral collaboration between national and local governments, the public, private and community sectors and related policy areas enables sustainable commitment and action for preventing violence.

focusing on preventing violence such as the TEACH-VIP curriculum developed by WHO need to be mainstreamed into curricula for health professionals. Networks such as health ministry focal people, nongovernmental organizations and academe can disseminate good practices. Capacity-building and disseminating good practices are also essential for the justice, education and social care sectors. Young people also need to be included, as integrating the prevention of violence into educational curricula may help to change attitudes towards and norms regarding violence, sensitize young people to the unacceptability of violence and promote gender and social equality. International agencies such as WHO can facilitate the sharing of best practice examples throughout the European Region.

**5. Improve the collection of data on the causes, effects and costs of violence.** Good mortality, morbidity and exposure data on violence are essential to developing and monitoring policies for preventing violence among young people. These appear to be incomplete in many countries, especially concerning the circumstances of and weapons used for assault, and concerted efforts are needed to improve their quality. This is especially true for hospital discharge and emergency department data sets, which are also incompletely filled for external causes (Box 5.5). Hospital-based injury surveillance systems should be introduced into emergency departments, and the sharing of data across agencies should be supported for preventive action. An important impediment to this is the differences in definitions and classifications between countries and sectors, and an internationally acceptable classification system is needed. The International Classification of External Causes of Injury (37), the *Injury surveillance guidelines* (38) and the *Guidelines on community surveys on injuries and violence* (39) are steps in this direction. Data are also needed that are disaggregated by age, sex and social class to monitor inequity in violence among young people.

**6. Define priorities for and support research.** Much of the research on violence has been

undertaken in the United States of America. In the European Region, case-control and cohort studies urgently need to be undertaken to better understand risk and protective factors, and there is a particular gap in knowledge regarding protective factors. Well-designed intervention studies are needed to evaluate preventive programmes and for implementing research to improve the adaptation, dissemination and implementation of preventive programmes in communities that are very diverse across the Region. The implementation of programmes represents an opportunity to undertake such evaluative research. Other key research issues that need to be strengthened are economic analysis, including the costs and benefits of interventions and research on nonfatal outcomes and the intergenerational effects of violence.

**7. Raise awareness and target investment for preventing violence among young people.** Raising awareness that violence among young people is preventable is paramount. Advocates for preventing violence among young people are needed, and young people need to be more engaged in the task (Box 5.6). Potential targets for advocacy are politicians, policy-makers, funding agencies, health and other professionals, the mass media and young people themselves. International and national nongovernmental organizations, the health sector and other sectors need to advocate for broad government policy leading to safer environments in social, community and family settings. Social marketing, mass-media and education programmes should be used to raise awareness of the effects of violence and to promote nonviolent behaviour.

**8. Address inequity in violence among young people.** The determinants of violence among young people include underlying structural, social and economic factors such as inequality, poverty and unemployment. Equity needs to be incorporated into all levels of government policy for governments are to address the inequitable distribution of violence among young people and achieve a fairer society for tomorrow's young people. All policies



### **Box 5.5. Sharing of health data in England**

As part of the Tackling Knives Action Programme, there has been a focus at the national level since 2008 on extending emergency department non-confidential data-sharing between hospitals and local partners on community safety partnerships. This work has involved encouraging hospitals to collect and share a minimum dataset informed by the Cardiff model (see section 4.4.5). The key information in the dataset is time, location and type of assault. A key part of this national programme of work has also been support for local and regional areas to overcome obstacles to sharing information and sharing examples of good practice between areas. As a result of the focus on data-sharing in England, more than 100 hospitals with emergency departments (which is more than 50% of all hospitals with emergency departments) are collecting and sharing information according to an informal survey conducted in March 2010. This compares with about 20 in June 2008. The recently elected coalition government has made a public commitment to “make hospitals share non-confidential information with the police so that they know where gun and knife crime is happening and can target stop-and-search in gun and knife crime hotspots”. A renewed focus on data-sharing is therefore expected to tackle violence during the coming years. Increasing attention is expected to be paid to the effects of data-sharing as it is extended nationally.

*Source:* personal communication, Martin Teff, Department of Health of England, London, United Kingdom.

### **Box 5.6. Strengthening laws in Germany after shootings at schools**

In recent years, two school shootings caused public outcries in Germany. On 26 April 2002, a 19-year-old male student killed 16 people (teachers and students) with a gun in a school in Erfurt. Seven years later, on 11 March 2009, a 17-year-old male student shot and killed 15 people in and outside a school in Winnenden, Baden-Württemberg. Both students ended their shooting sprees by taking their own lives. The ensuing public debate and policy response about possible prevention strategies focused on two main areas: access to guns and the role that violent computer games might play in the life of teenagers. These shootings resulted in several changes to legislation, especially the 2002 shooting. The law for the protection of children and teenagers now proscribes that all commercially available computer games have to be checked by an independent organization to determine whether the content contains items that would encourage violence behaviour. All computer games are now labelled with an age rating. Second, the gun control law was altered so that everyone younger than 25 years has to present a psychological assessment to get a gun licence. In addition, regulations for the storage of guns have been tightened. These examples show that singular but catastrophic events can be used for advocacy and, in this case, prompted politicians to react in response to the public outcry. The measures that were introduced are being evaluated to assess their effectiveness.

*Source:* personal communication, Dirk Baier and Sussan Rabold, Criminological Research Institute of Lower Saxony, Hanover, Germany.

need to be equitable and incorporate health, as promoted by the WHO Commission on Social Determinants of Health (6). The health sector has a key role to advocate for this across other government departments and to highlight violence among young people as a consequence of social policies. As part of this, policies and programmes should address gender inequity associated with the different types of violence. Further, some policies, such as those for universal health care, education,

early child development, fair employment for parents and social protection, should seek to look after the disadvantaged (Box 5.7). The health sector needs to ensure that the prevention of violence is universally incorporated into primary health care services and can support community-based action paying special attention to socially disadvantaged people. Targeting programmes to the most deprived people should also be considered.

### Box 5.7. Creating healthier, fairer and safer communities: a public health framework for preventing violence and abuse in England

England's Department of Health is producing a framework document (40) that aims to raise awareness and increase commitment to the primary prevention of violence and abuse. The report shows how violence and abuse are serious public health issues that have high economic and social costs for people, services, communities and society. It also highlights the wide-ranging health and social benefits of prevention and how prevention could support government priorities that tackle violence and abuse such as information sharing, tackling sexual violence, tackling alcohol-related problems and supporting families with multiple problems. Through up-to-date information and using a range of evidence sources, the document sets out the wide range of effects violence and abuse can have on people's health and social well-being throughout their lives as well as on social exclusion and inequality. The framework document provides an evidence base of what works in the primary prevention of violence and abuse, including interventions with those at risk as well as evidence on cost-effectiveness.

The framework document also promotes public health approaches that improve health and social outcomes and reduce risk. These include intervening early, tackling wider determinants of health and social welfare and promoting partnerships that involve agencies and communities in strategies to stop violence before it starts. The recommendations in the document will be considered for implementation (39).

Source: personal communication, Damian Basher, Department of Health of England, London, United Kingdom.

## 5.4 Conclusions

Interpersonal violence is the third leading cause of death among young people in the European Region, with far-reaching consequences for the mental and physical health of young people and on societal development. Although violence is a public health priority in the Region, few countries have devoted adequate resources to preventing it. Given this insufficient response, this report proposes a set of actions for Member States, international agencies, nongovernmental organizations and other stakeholders. This report has outlined the large burden of violence among young people, its causes and the cost-effectiveness of prevention programmes. These make compelling arguments for advocating for increased investment in prevention and for mainstreaming objectives for preventing violence among young people into other areas of health and public policy. The public is increasingly demanding a new course of action; this report has proposed a strong preventive approach towards the challenge of violence among young people based on a growing evidence base and practical experience. This is the time to turn the tide in each Member State and tackle the root causes of violence and achieve greater social justice for tomorrow's young people.

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# ANNEX 1.

## ADDITIONAL RESULTS AND DEFINITIONS

The *World report on violence and health (1)* defines violence as the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that results either in injury, death, psychological harm, maldevelopment or deprivation. Violence may be classified as interpersonal when it occurs between individuals, as self-directed when directed to the self or as collective violence that occurs between groups and may be politically or economically motivated. Many of the risk factors, however, are cross-cutting, and there is synergy in the strategies for prevention, whether they address interpersonal, self-directed or collective violence. The current report is only concerned with interpersonal violence among young people.

### A public health approach to preventing violence

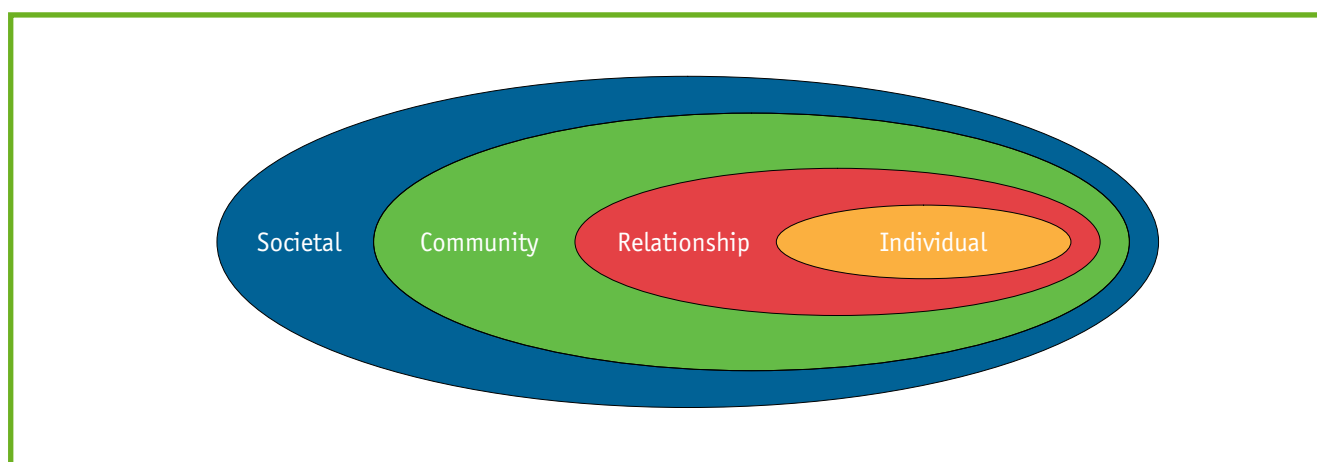
The public health approach to preventing violence is a systematic approach, taking four logical steps (2). The first is surveillance, to determine the extent of the problem, where it occurs and whom it affects. Second, risk factors are identified to

understand why a certain group of people is at risk. Step three is to develop and evaluate interventions that work, and step four is the wide implementation of proven strategies, accompanied by evaluation. Stakeholders from different sectors can use this approach, which ensures that concrete measures are used to prevent violence.

### An ecological model for preventing violence

The *World report on violence and health* proposed an ecological model for understanding violence and preventing it that classifies risk factors for violence by four levels: individual, relationship, community and societal (1) (Fig. 1). Risk factors for violence are conditions that are associated with an increased likelihood of becoming a victim or perpetrator of violence. No single factor explains why a person or group is at high or low risk. Rather, violence is an outcome of complex interaction among many factors. Similarly, interventions and programmes to prevent violence that are directed at the various risk factors can also be considered using the ecological model.

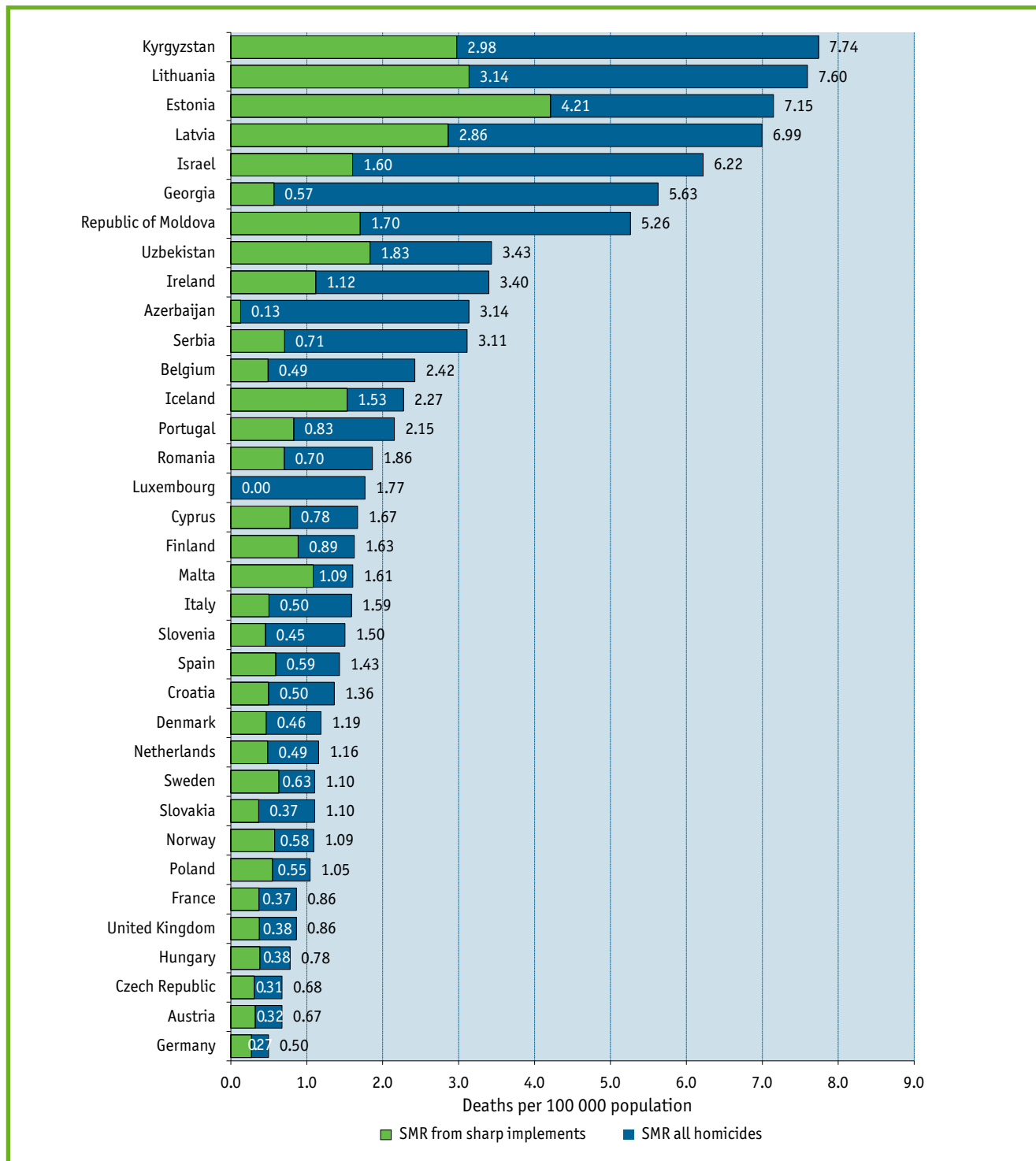
Fig. 1. An ecological framework describing the risk factors for violence among young people and interventions for preventing it



Source: *World report on violence and health (1)*

Fig. 2–8 present results that supplement those in the main text.

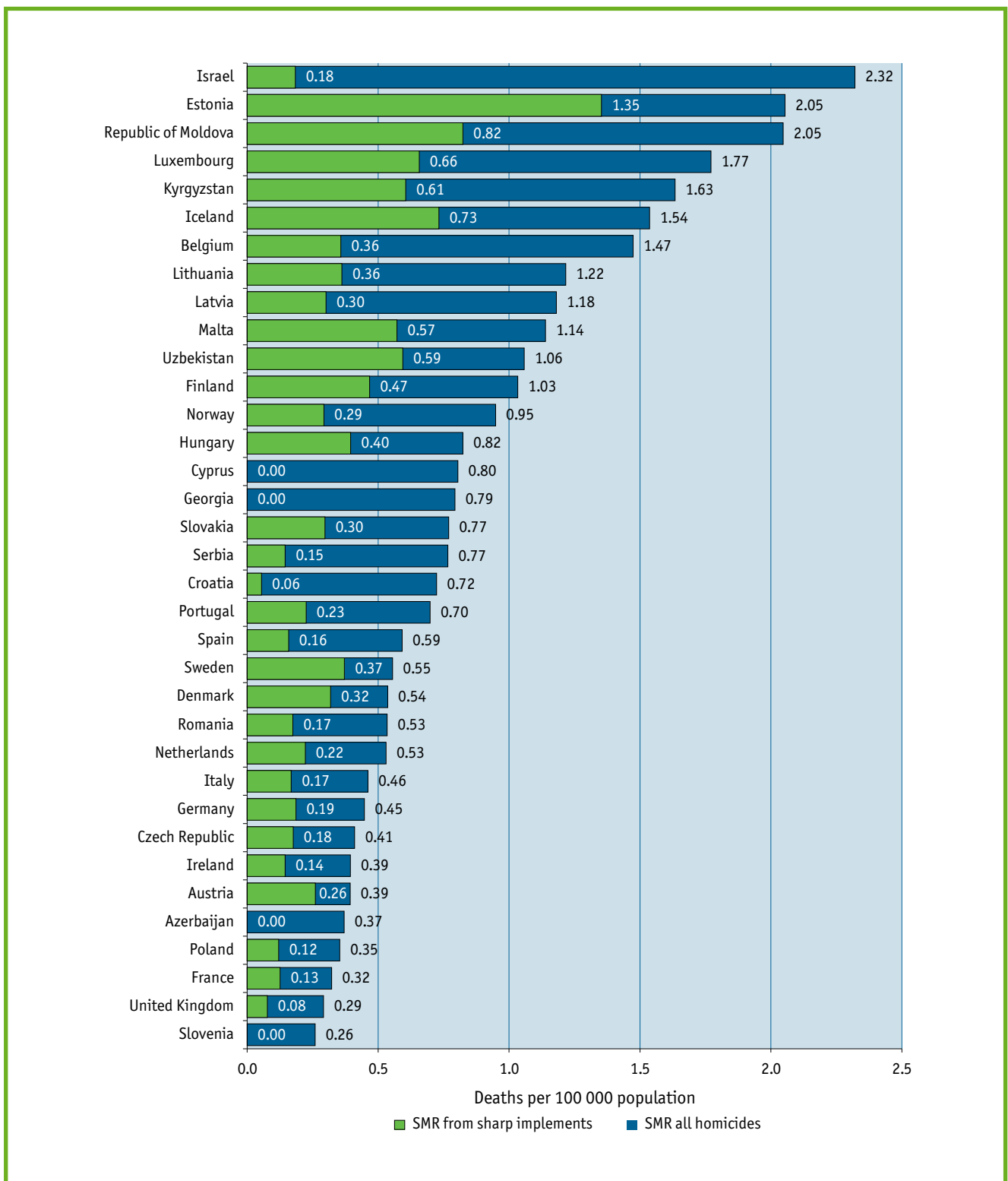
**Fig. 2. Age-standardized mortality rates (SMR) per 100 000 population among males aged 10–29 years from all causes of homicide and from sharp implements in selected countries in the WHO European Region, 2004–2006<sup>10</sup>**



Source: European detailed mortality database (DMDB) [online database] (3).

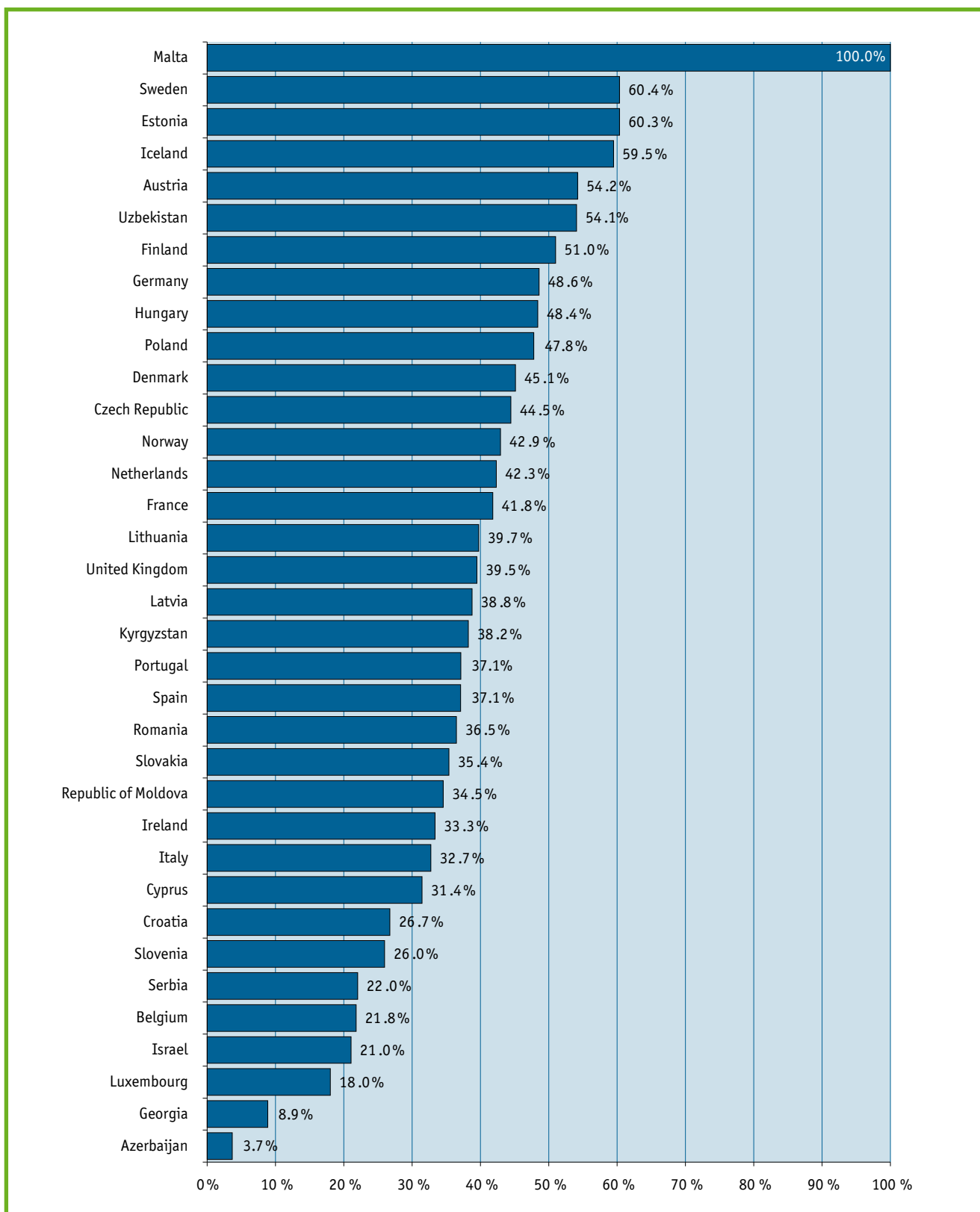
<sup>10</sup> The results for countries with a population of less than 1 million such as Iceland, Luxembourg and Malta need to be interpreted cautiously, as a small number of incidents could exaggerate the true picture.

**Fig. 3. SMRs per 100 000 population among females aged 10–29 years from all causes of homicide and from sharp implements in selected countries in the WHO European Region, 2004–2006**



Source: European detailed mortality database (DMDB) [online database] (3).

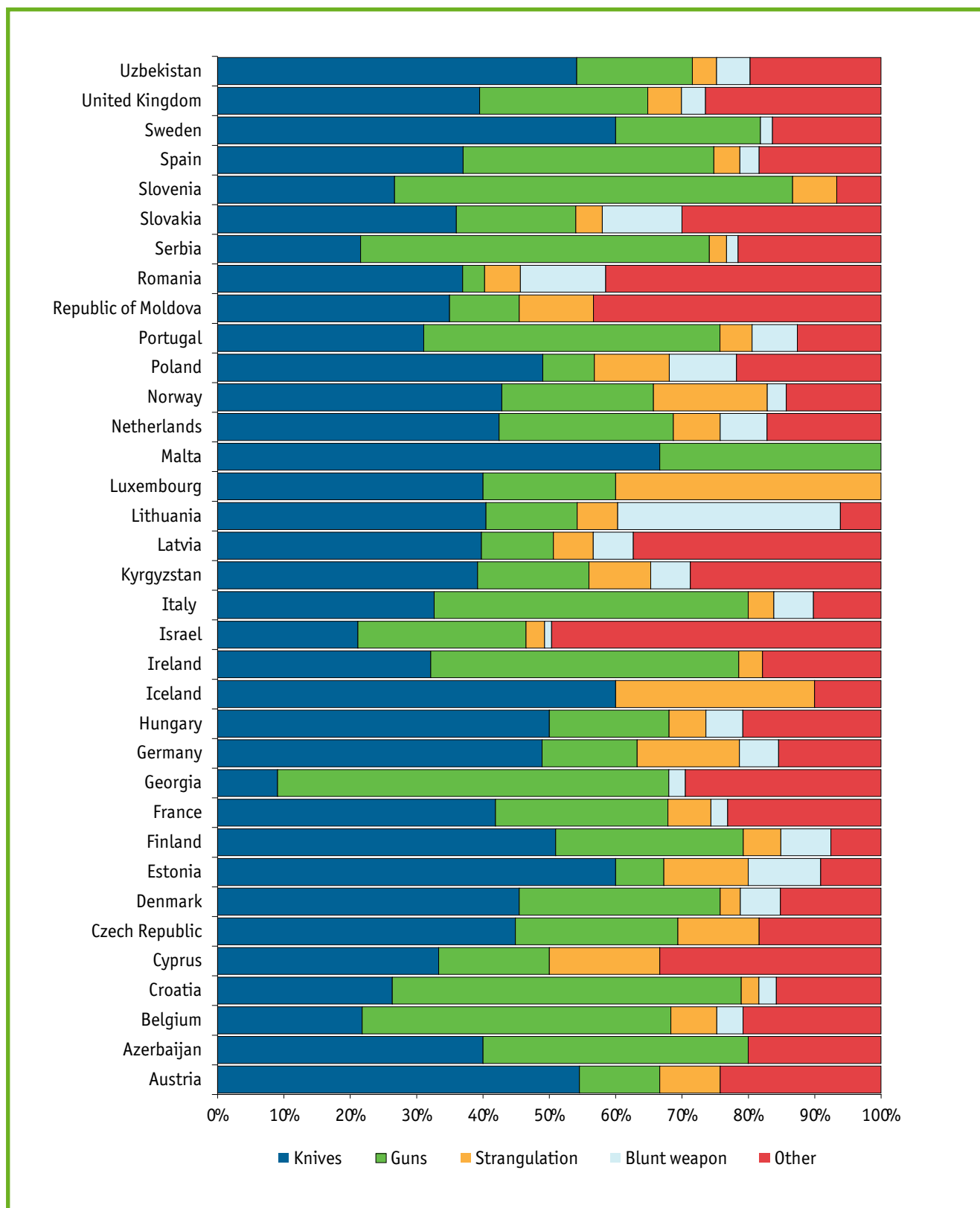
**Fig. 4. Proportion of homicides due to knives and sharp implements among people aged 10–29 years in selected countries in the WHO European Region, 2004–2006**



Source: European detailed mortality database (DMDB) [online database] (3).

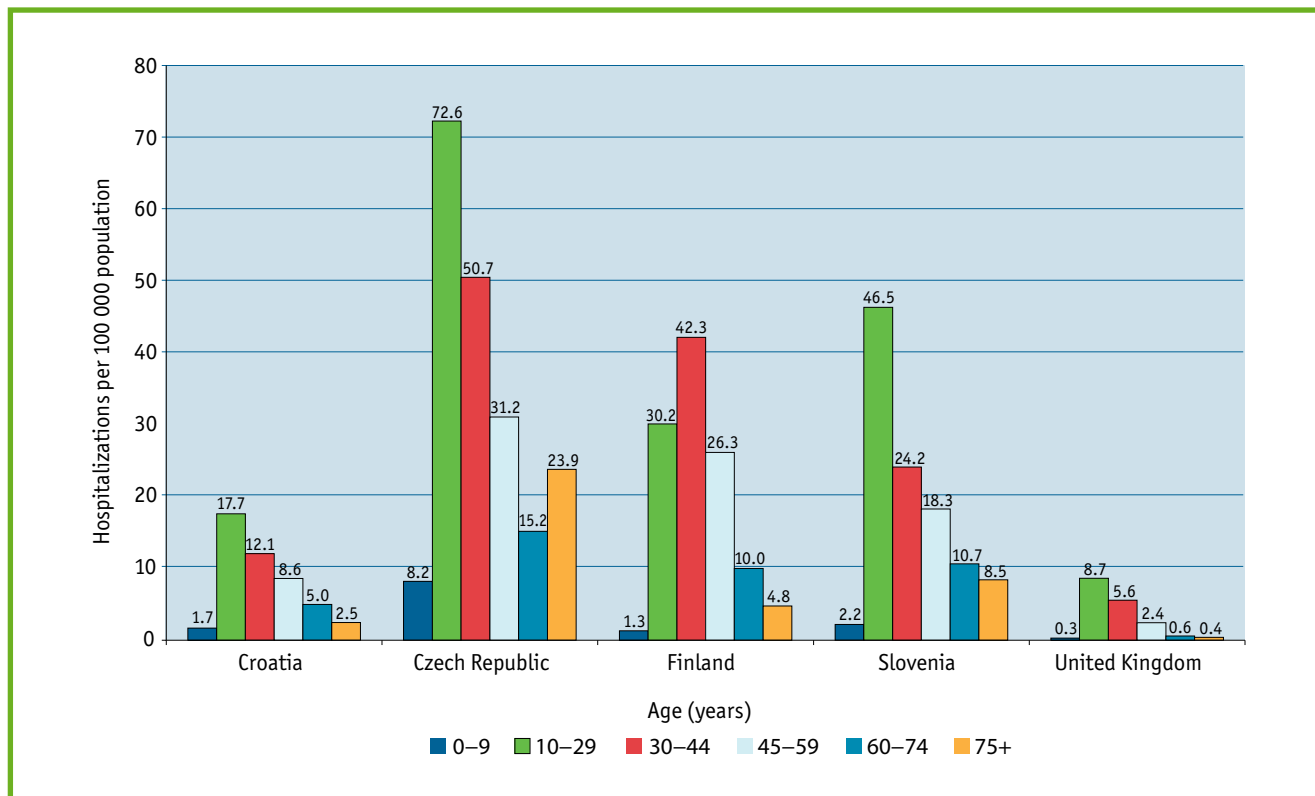


**Fig. 5. Proportion of all homicide victims among people aged 10–29 years due to sharp weapons, firearms, strangulation and other means in selected countries in the WHO European Region, 2004–2006**



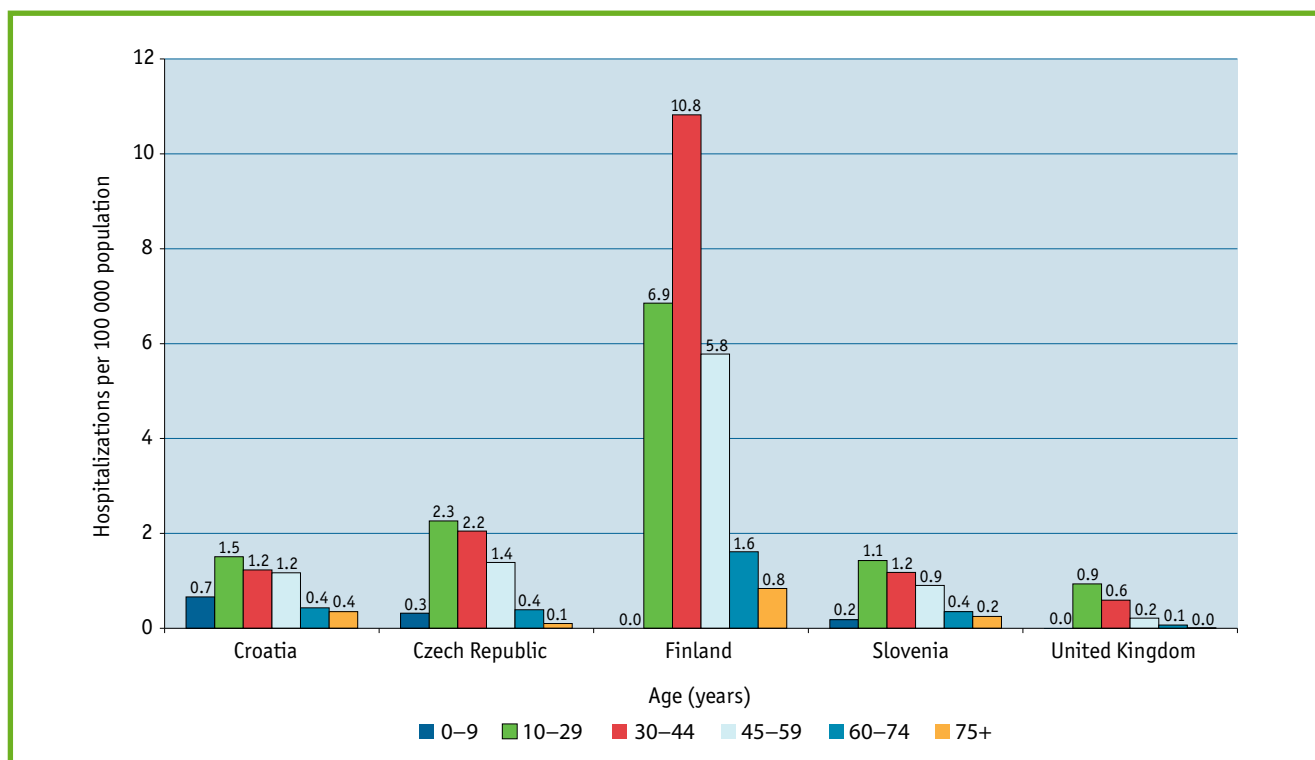
Source: European detailed mortality database (DMDB) [online database] (3).

**Fig. 6. Age-specific hospitalization rates per 100 000 population for assaults from all causes in five countries in the WHO European Region, average for 2004–2006**



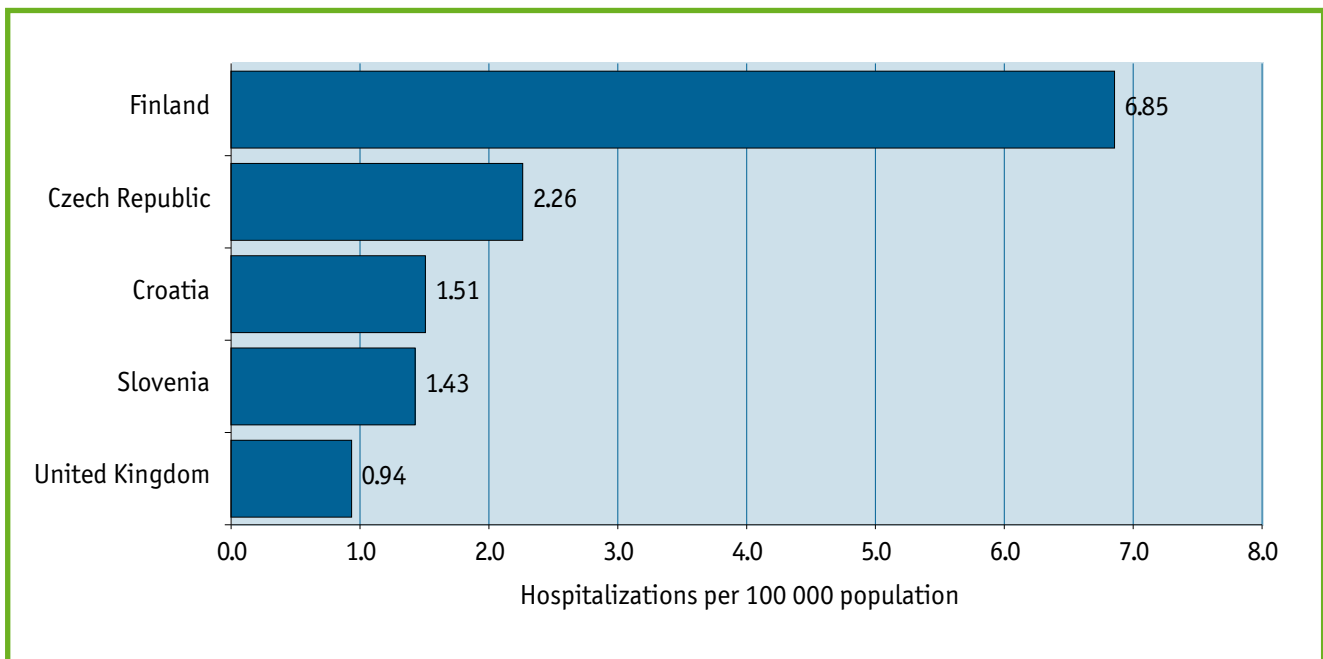
Source: European hospital morbidity database [online database] (4).

**Fig. 7. Age-specific hospitalization rates per 100 000 population for assault with knives and sharp implements in five countries in the WHO European Region, average for 2004–2006**



Source: European hospital morbidity database [online database] (4).

**Fig. 8. Hospitalization rates per 100 000 people aged 10–29 years for assaults by knives and sharp implements for five countries in the WHO European Region, average for 2004–2006**



Source: European hospital morbidity database [online database] (4).

### Justification for selecting people aged 10–29 years

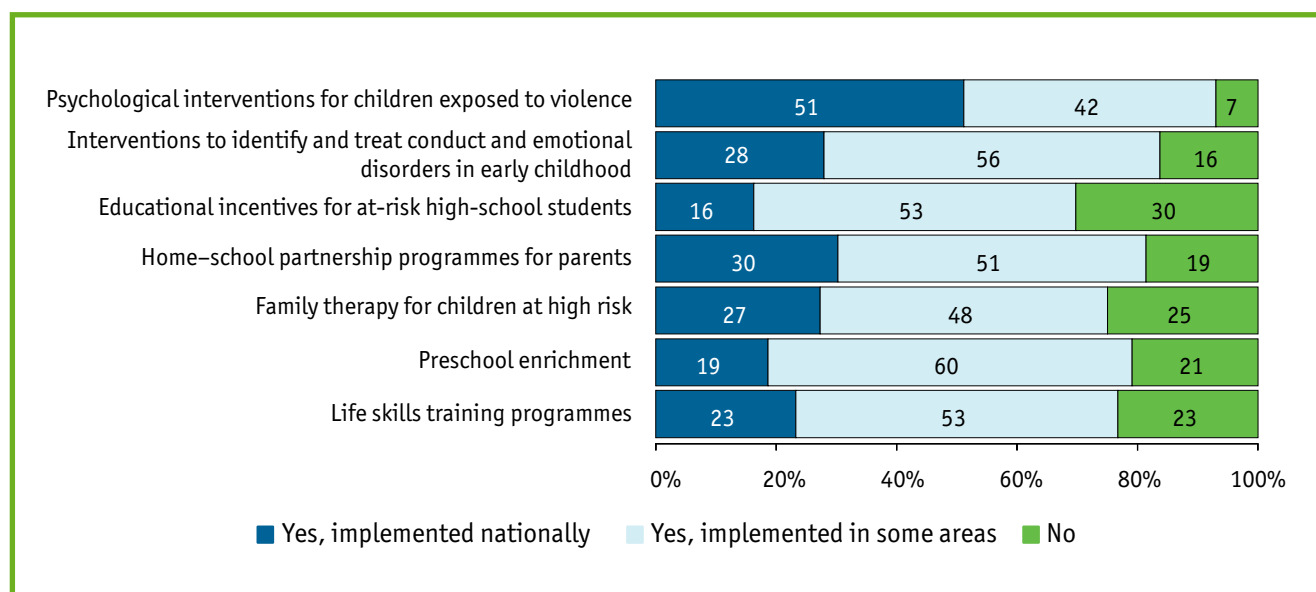
The *World report on violence and health* defines youth as adolescents and young adults aged 10–29 years. This report focuses on young people and, as explained in Chapter 1, this is because of the large loss to society from violence in this age group and because of their vulnerability to violence. Nevertheless, in many but not all countries of the European Region, homicide rates are higher among people aged 30–44 years. In countries for which data are available on hospital admission rates for assaults, these show that the rates are highest among young people in all countries except for Finland, where these are highest among people aged 30–44 years.

young people (5). This was lower than for other forms of violence such as child maltreatment (79%) and intimate partner violence (76%). In response to whether seven types of evidence-based programmes were implemented locally or nationally, most reported that these were being implemented locally rather than nationwide (Fig. 9). The median for the implementation of these seven programmes was 89% at the local level but only 14% nationwide. This emphasizes the need for giving greater priority to more widespread implementation of evidence-based programmes and to developing national policy on preventing violence among young people.

### Survey of health ministry focal people for preventing injury and violence

A 2009 survey of health ministry focal people for preventing violence and injury from 47 respondent countries reported that 29 countries (62%) had national policies for preventing violence among

**Fig. 9. Survey on whether programmes for preventing violence among young people are implemented nationally or locally**



Source: Sethi et al. (5).

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# ANNEX 2. METHODS USED

## Background on statistical information

This report relies on several WHO sources of information for the statistical data, tables, figures and annexes: (a) the WHO Global Burden of Disease 2004 (1), (b) the WHO European mortality indicators by 67 causes of death, age and sex (2), (c) the WHO detailed mortality database (3) and (d) the WHO European hospital morbidity database (4). WHO data for the European Region are collected annually. In addition, data from the EU Injury Database on emergency room attendance (5) and from crime and delinquency surveys within the European Region were used (6,7).

## How interpersonal violence can be measured

Interpersonal violence can manifest as physical, sexual and mental harm and deprivation. This report uses routine health statistics that record nonfatal intentional injuries (assault) and intentional injuries resulting in death (homicide) using the International Statistical Classification of Diseases and Related Health Problems (ICD).

Deaths and health states from interpersonal violence are categorically attributed to one underlying cause based on the rules and conventions of the ICD. Most countries use the ninth revision of the ICD (ICD-9), the ICD-9 basic tabular list (BTL) or the tenth revision of ICD (ICD-10). Table 1 shows the ICD codes used for the external causes of injury.

## Global Burden of Disease database

The Global Burden of Disease database combines mortality data derived from national vital registration systems with information obtained from surveys, censuses, epidemiological studies and health service data. It represents the most comprehensive view of global mortality and morbidity available today (1). The Global Burden of Disease data are disaggregated into the six WHO regions and 14 subregions. The data for the European Region have been used by income groups: high-income countries and low- and middle-income countries according to the World Bank definition (Table 2). The estimates provided

**Table 1. External causes of injury related to violence and their corresponding ICD codes**

Type of violence	ICD-9 codes	ICD-10 codes
1. Interpersonal violence	E960–E969	X85–Y05, Y08–Y09
2. Assault with sharp objects	E966	X99
3. Assault with blunt objects	Not available	Y00
4. Assault with rifle, shotgun and firearms	E965	X93–X95
5. Assault by hanging, strangulation and suffocation	E963	X91
6. Other assaults*	E960–E962, E964, E967–E969	X85–X90, X92, X96–X98, Y01–Y05, Y08–Y09

\* Other types of assault include, for example, assault by poisoning, by corrosive substances, by pesticides, by gases and vapours, by drowning and by bodily force.

are for 2004. The cause list used for the Global Burden of Disease 2004 project has four levels of disaggregation that include 135 specific diseases and injuries. Overall mortality is divided into three broad groups of causes:

- A. group I: communicable diseases, maternal causes, conditions arising in the perinatal period and nutritional deficiencies;
- B. group II: noncommunicable diseases; and
- C. group III: intentional and unintentional injuries, with external cause codes.

The data are disaggregated by sex and age groups: 0–4, 5–14, 15–29, 30–44, 45–59, 60–74 and 75 years and older.

The disability-adjusted life-year (DALY) has been used to quantify the loss of healthy life due to injury or disease. This measure is a composite score of both the years of life lost due to premature death and the years of life lived with disability (8). One DALY lost is one year of healthy life lost due to either premature death or disability.

The Global Burden of Disease data were used to calculate rates and rate ratios.

### **WHO European mortality indicators by 67 causes of death, age and sex (off-line version, January 2010)**

The WHO European Health for All database contains data on health indicators, including mortality, morbidity and disability from multiple causes, including external causes of injuries. These data allow trend analysis and international comparisons for several health statistics. The data also contain age-standardized mortality indicators. The age-standardized rates per 100 000 population in the European Region are presented by sex and for the age groups 0–4, 5–14, 15–29, 30–44, 45–59, 60–74 and 75 years and older. The data are compiled, validated and processed uniformly to improve the international comparability of statistics. The data available are from 1979 onwards. This report used the version of the Health for All database updated

in January 2010. ICD codes were used for data on all homicides among people 15–29 years old.

### **WHO European detailed mortality database**

The WHO detailed mortality database is a more complete source of mortality data that also provides information at the subnational level. For participating countries for which data are available, it includes mortality data by five-year age groups using the ICD-9, ICD-10 or BTL codes officially reported by WHO Member States. The data available are from 1990 onwards. For the purposes of this report, data were downloaded for the years 2004–2006 (or the most recent three years available) for the following age groups: 0–9, 10–29, 30–44, 45–59, 60–74 and 75 years and older. This report uses the version of the detailed mortality database dated January 2001, which provides external cause data on assaults by specific causes, such as assaults with sharp objects and for the age group 10–29 years. Such detailed information was only available for 35 countries. Data on homicide (all methods used) were used to calculate age-specific mortality rates for people 10–29 years old for 45 countries. Data were not available for the other eight countries for homicide for people 10–29 years old. The results for countries with a population of less than 1 million such as Iceland, Luxembourg and Malta need to be interpreted cautiously, as a small number of deaths could exaggerate the true picture. A three-year period was used to increase reliability.

### **WHO European hospital morbidity database**

The WHO European hospital morbidity database includes morbidity data by five-year age groups as officially reported by the Member States with ICD-9, ICD-10 and BTL codes. These data are complete for Croatia, the Czech Republic, Finland, Slovenia and the United Kingdom. The data are available from 1999 onwards. For the purposes of this report, data were downloaded for 2006–2008 (or the most recent three years available) for the following age groups: 0–9, 10–29, 30–44, 45–59, 60–74 and 75 years and older, and age-specific admission rates

were calculated for people aged 10–29 years. This report used the January 2010 update of the database and excluded day cases.

## The EU Injury Database

The EU Injury Database provides data on emergency department attendance for selected hospitals from several countries. Data for the years 2005–2008 were used for Austria, Cyprus, Denmark, Germany, Latvia, Malta, the Netherlands, Slovenia and Sweden.

## Limitations of current routine information systems

These data have several limitations.

- First, vital registration data are missing in a few countries. This is particularly the case in some of the countries affected by transition and conflict. Mortality data are also not adequate for Andorra, Monaco and Turkey.
- Second, the Global Burden of Disease 2004 estimates are based on extrapolation of information compiled to estimate the burden of disease. Although these have been updated using recent studies since those in 1990, few studies have measured disability.
- Third, DALYs do not capture data on all the health effects of injury. For example, DALYs do not account for the effects of violence or injuries on mental health and reproductive health.
- Fourth, since countries' systems and practices for recording and processing health data vary, the availability and accuracy of the data reported to WHO may vary.
- Fifth, sociocultural contexts influence the data, and intentional injuries may be misclassified as unintentional or of undetermined intent. International comparison between countries and interpretation should thus be carried out with caution.
- Sixth, few countries provided reliable morbidity data with external causes to WHO information systems, and the picture for the European Region is therefore incomplete.

## Classification of countries by income

The countries in the Region have been disaggregated into high-income countries and low- and middle-income countries based on the World Bank definition. The countries are divided by income level according to 2001 gross national income per capita as defined by the World Bank Atlas method used in the Global Burden of Disease 2004 (Table 2).

In 2001, the income levels for these groups were:

- low income: US\$ 745 or less;
- middle income: US\$ 746 – 9205
- high income: US\$ 9206 or more.

## Calculation of standardized mortality rate ratios

Standardized mortality rate ratios were calculated for people aged 15–29 years to determine the excess risk of dying from interpersonal violence for people living in low- and medium-income countries versus high-income countries. Death data were downloaded from the Global Burden of Disease 2004, and age-standardized mortality rates were calculated using the European Region population for standardization. Confidence intervals were calculated but are not included because they are narrow.

## Calculation of potential lives saved for all ages in the European Region if all countries had the same mortality rate as the country with the lowest rate

The total observed numbers of deaths was obtained from WHO European mortality indicators by 67 causes of death, age and sex. Mortality rates were retrieved, for all countries, for the age group 15–29 years and the average of last three available years (2004–2006 or the most recent three years available) of data were computed. Germany had the lowest mortality rate for this three-year period (0.60 per 100 000 population). This lowest mortality rate was applied to the population for the Region and the total number of estimated deaths

**Table 2. High-income and low- and middle-income countries in the WHO European Region according to the World Bank Atlas method, 2001**

<b>High-income</b>	<b>Low- and middle-income</b>
Andorra	Albania
Austria	Armenia
Belgium	Azerbaijan
Cyprus	Belarus
Denmark	Bosnia and Herzegovina
Finland	Bulgaria
France	Croatia
Germany	Czech Republic
Greece	Estonia
Iceland	Georgia
Ireland	Hungary
Israel	Kazakhstan
Italy	Kyrgyzstan
Luxembourg	Latvia
Malta	Lithuania
Monaco	Montenegro
Netherlands	Poland
Norway	Republic of Moldova
Portugal	Romania
San Marino	Russian Federation
Spain	Serbia
Sweden	Slovakia
Switzerland	Slovenia
United Kingdom	Tajikistan
	The former Yugoslav Republic of Macedonia
	Turkey
	Turkmenistan
	Ukraine
	Uzbekistan



calculated. A three-year period was chosen to increase reliability. The total potential number of deaths avoided was thus obtained by subtracting the estimated deaths from those actually observed.

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# ANNEX 3.

## LIST OF HEALTH MINISTRY FOCAL PEOPLE WHO RESPONDED TO QUESTIONNAIRE ON KNIFE-RELATED VIOLENCE

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Albania	Gentiana Qirjako, Public Health Department and Maksim Bozo, Ministry of Health
Andorra	Rosa Vidal, Ministry of Health, Well Being and Labour
Armenia	Ruzanna Yuzbashyan, Ministry of Health
Austria	Rupert Kissler, Kuratorium für Verkehrssicherheit
Azerbaijan	Rustam Talishinskiy, Traumatology Centre Baku
Belgium	Christiane Hauzeur, Federal Public Service - Health, Food Chain Safety and Environment
Bosnia and Herzegovina	Jasmina Cosic, Federal Ministry of Health
Bulgaria	Fanka Koycheva, National Center for Public Health Protection
Cyprus	Myrto Azina-Chronides, Ministry of Health
Denmark	Lasse Risager, Ministry of Justice
Finland	Helena Ewalds, National Research and Development Centre for Welfare and Health (STAKES)
Greece	Dimitrios Efthymiadis, National Centre for Emergency Health Care
Hungary	Maria Benyi, National Centre for Healthcare Audit and Inspection and Maria Herczog, Eszterházy Károly College
Iceland	Rosa Thorsteinsdottir, Public health institute of Iceland
Ireland	Robbie Breen, Department of Health and Children
Israel	Yitzhak Berlovitz, Ministry of Health and Kobi Peleg, Gertner Institute for Epidemiology and Health Policy Research
Italy	Giuseppina Lecce, Ministry of Health
Kyrgyzstan	Samat Toymatov, Ministry of Health
Latvia	Jana Feldmane, Ministry of Health
Lithuania	Robertas Povilaitis, Childline
Malta	Taygeta Firman, General Directorate for Health
Montenegro	Svetlana Stojanovic, Ministry of Health
Poland	Wojciech Kłosiński, Ministry of Health
Romania	Daniel Verman, Ministry of Health
Russian Federation	Margarita Kachaeva, Centre for Social and Forensic Psychiatry
San Marino	Andrea Gualtieri, Authority of Public Health
Slovakia	Martin Smrek, University Children's Hospital
Slovenia	Barbara Mihevc Ponikvar, Institute for Public Health
Spain	Begoña Merino Merino, Ministry of Health and Social Policy
The former Yugoslav Republic of Macedonia	Fimka Tozija, Ministry of Health
United Kingdom	Mark Bellis and Karen Hughes, Liverpool John Moores University
Uzbekistan	Alisher Iskandarov, Pediatric Medical Institute



## The WHO Regional Office for Europe

The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

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Sweden  
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Tajikistan  
The former Yugoslav  
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