



Injuries and Violence

April 2006

Unintentional Injuries and Violence Impose a Tremendous— But Preventable—Health Burden, Especially in Developing Countries

Injuries and violence caused more than 5 million deaths worldwide in 2001, but deaths are just a fraction of the health burden: Serious injuries can lead to loss of limbs, hearing, or sight; brain damage; paralysis; and other debilitating conditions.

Injuries account for about 9 percent of the death and disability burden in developing countries. Injuries are increasingly recognized as a public health problem than can be mitigated through public policies, engineering, enforcement, and education.

Treating injuries to save lives and minimize disabilities in developing countries can be greatly enhanced by better emergency response capabilities and expanded surgical services in hospitals. Training lay first responders and volunteer paramedics, for example, could get help to injured people faster; and better trauma and injury units in district hospitals could treat the most serious cases.

Traffic-Related Injuries Increasing

About two-thirds of injury deaths are unintentional, with the majority stemming from road traffic crashes. One study estimates that road crashes cost about 1 percent of gross national product (GDP) in developing countries; the percentage is higher in more developed countries. The rapid increase in motor vehicle ownership—especially motorcycles and scooters—in developing countries is escalating road-traffic injuries. Young adults, especially young men, are particularly vulnerable to traffic-related injuries. Each year, road traffic crashes account for 1.2 million deaths and 20 million to 50 million serious injuries. Ninety percent are in low- and middle-income countries. The health burden from road traffic-related injuries is similar to that from malaria and tuberculosis.

Alcohol use is implicated in a large share of traffic-related injuries. Studies in developing countries have found that one-third to two-thirds of traffic crashes killing the driver involved a driver who had been drinking, and more than one-half of the pedestrians killed by a motor vehicle in some developing countries had consumed alcohol.

The most cost-effective ways to avoid crashes and reduce the injuries caused in a crash include:

- Make roads safer by separating pedestrians and bicyclists from motorized traffic on roadways; installing traffic signals and speed bumps at dangerous intersections and guardrails on sharp curves; constructing traffic medians on busy highways; and improving street lighting.
- Ensure safer driving by enforcing minimum age limits for drivers; enforcing traffic laws, especially against speeding and driving while intoxicated; and requiring use of seatbelts in automobiles and helmets for two-wheeled-vehicle riders.
- Improve motor vehicle safety by enforcing safety standards and installing seat belts and other safety measures.

Other Unintentional Injuries

Aside from traffic-related injuries, poisoning, falls, burns, and drowning are major causes of unintentional injuries—accounting for an estimated 40 percent of deaths and 35 percent of lost years of life and economic productivity in 2001 (see Figure 1, next page).

Poisonings—which predominately affect children—often involve common household chemicals and can be prevented through better storage of hazardous chemicals and use of child-resistant containers.

Falls pose an especially high risk for older people and often occur within the home. Safety measures such as stair railings, electric lighting, and guardrails can minimize hazards. Physical conditioning can help older people stay more agile.

Burns from fires and scalding liquids affect women and children as well as men—the most vulnerable groups vary by country and rural or urban residence. Burns are much more common in households in which there is no separate cooking area and no source of water to extinguish fires—which means the poorest population groups are at greatest risk.

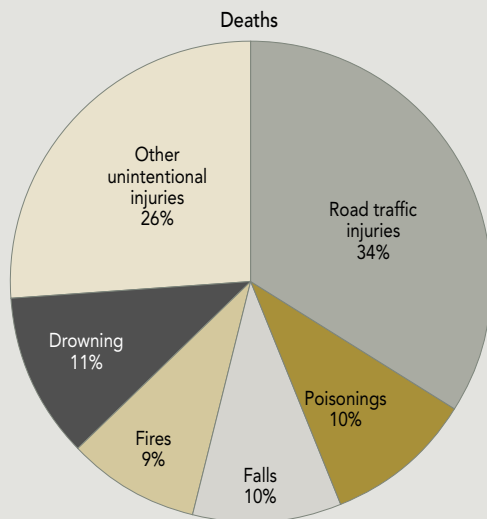
Drowning deaths are a common risk in developing countries where everyday activities occur around bodies of water, including rivers and wells. Drowning accounts for a higher proportion of injury-related deaths among children ages 1 to 4, young adults, and men of all ages than other age and sex groups. Adult drowning deaths are often associated with alcohol consumption.

Violence

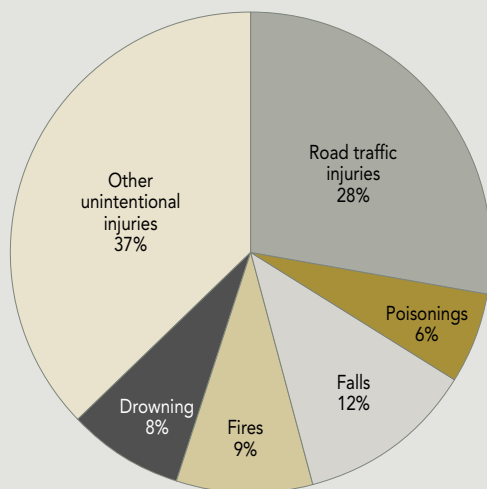
More than 1.6 million people are killed by violent acts each year, with the vast majority occurring in developing countries (see Table 1). The rate of violent death was 31 per 100,000 people in developing countries in 2001, compared with 14 per 100,000 in developed countries. The economic and social costs of violence are substantial, and involve many aspects of family and community life.

Figure 1

Distribution of Unintentional Injuries, Low- and Middle-Income Countries, 2001



DALYs*



*Note: Disability-adjusted life years (DALYs) are a measure of the amount of health lost due to a particular disease or condition.

Source: Norton R., A. A. Hyder, D. Bishai, and M. Peden. 2006. "Unintentional Injuries." In *Disease Control Priorities in Developing Countries*, 2nd ed., ed. D. T. Jamison, J. G. Breman, A. R. Measham, G. Alleyne, M. Claeson, D. B. Evans, P. Jha, A. Mills, and P. Musgrove, figure 39.1. New York: Oxford University Press.

Table 1

Estimated Violence-Related Deaths, by Type and Region, 2001

Category	Number ^a	Rate per 100,000 population ^b	Proportion of total (percent)
Suicide	875,000	15.2	53.3
Homicide	557,000	9.3	34.0
War-related fatality	208,000	3.5	12.7
Total	1,640,000	28.8	100.0
Low- & middle-income countries	1,489,000	31.0	90.8
High-income countries	150,000	14.3	9.2

a. Rounded to the nearest thousand.

b. Age standardized.

Source: Rosenberg, M. L., A. Butchart, J. Mercy, V. Narasimhan, H. Waters, and M. S. Marshall. 2006. "Interpersonal Violence," In *Disease Control Priorities in Developing Countries*, 2nd ed., ed. D. T. Jamison, J. G. Breman, A. R. Measham, G. Alleyne, M. Claeson, D. B. Evans, P. Jha, A. Mills, and P. Musgrove, table 40.1. New York: Oxford University Press.

No single risk factor explains why a person or group is at a high or low risk of violence. Rather, violence results from the interaction of many factors, including alcohol or substance abuse, psychological disorders, childhood experiences, poverty, and access to a gun or other weapon.

Rates and patterns of violent death vary by country and region. For example, homicide rates are highest in Sub-Saharan Africa and Latin America, and lowest in East Asia and some countries in northern Africa. Poorer countries, especially those with large gaps between the rich and poor, tend to have higher rates of homicide than wealthier countries.

Men are more than three times as likely as women to die from a homicide, and two-thirds more likely than women to die through suicide. Age is another important factor: Adults ages 15 to 44 have highest risk of homicide, while people age 60 or older have the highest risk of suicide.

Alcohol Abuse Increases Risk for Injury and Violence

Alcohol abuse is an important risk factor for traffic-related injuries and interpersonal violence and is often implicated in drowning and other causes of injuries as well. Cost-effective strategies to reduce alcohol abuse include:

- Increase the retail cost with higher taxes on alcoholic beverages, scaled by alcohol content.
- Ban advertising of alcoholic beverages.
- Limit the sale of alcoholic beverages to specific places and times.
- Encourage primary care physicians to advise patients about alcohol abuse.

For More Information

See the following chapters in Jamison, D. T., J. G. Breman, A. R. Measham, G. Alleyne, M. Claeson, D. B. Evans, P. Jha, A. Mills, and P. Musgrove, ed. 2006. *Disease Control Priorities in Developing Countries*, 2nd ed. New York: Oxford University Press.

Norton, R., A. A. Hyder, D. Bishai, and M. Peden. 2006. "Unintentional Injuries." 737–54.

Rosenberg, M. L., A. Butchart, J. Mercy, V. Narasimhan, H. Waters, and M. S. Marshall. 2006. "Interpersonal Violence," 755–70.