



Health and Longevity

The health of a country's population is often monitored using two statistical indicators: life expectancy at birth and the under-5 mortality rate. These indicators are also often cited as overall measures of a population's **quality of life** because they indirectly reflect many aspects of people's welfare, including their levels of income and nutrition, the quality of their environment, and their access to health care, safe water, and sanitation.

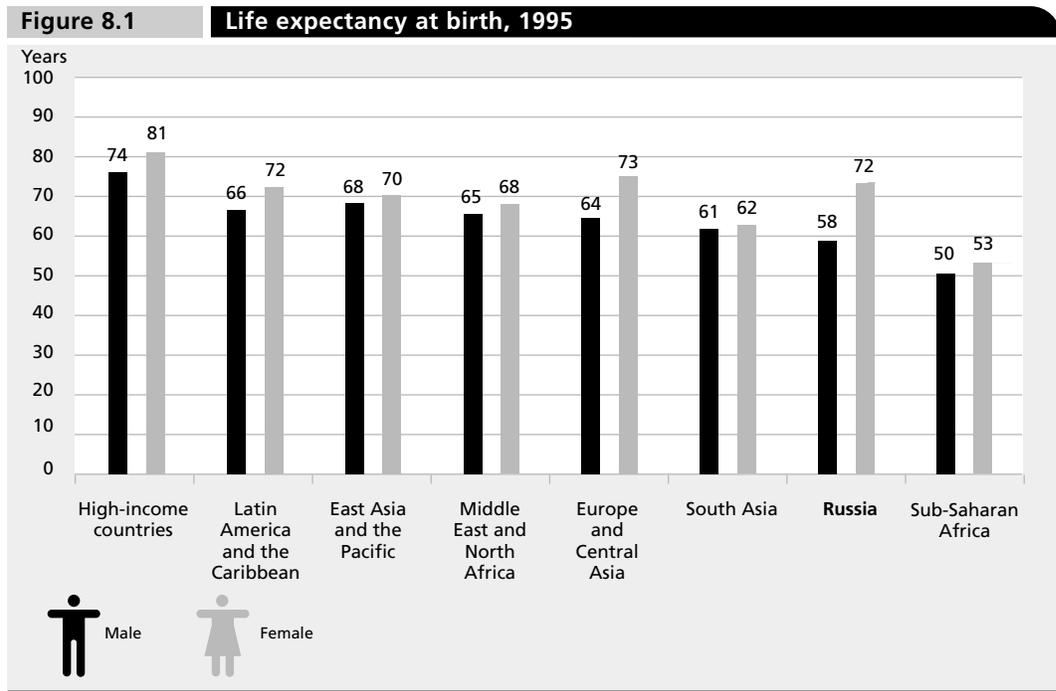
Life expectancy at birth indicates the number of years a newborn baby would live if health conditions prevailing at the time of its birth were to stay the same throughout its life. This indicator does not tell how long a baby will actually live, but rather how long a baby born in a certain year is likely to live. The under-5 mortality rate indicates the number of children who are likely to die before reaching age five per 1,000 live births. Because infants and children are most vulnerable to malnutrition and poor hygienic living conditions, they account for the largest portion of deaths in most developing countries.

Therefore, decreasing under-5 mortality is the most effective way of increasing life expectancy at birth in the developing world.

Global Trends

During the second half of the 20th century health conditions around the world improved more than in all previous human history. Average life expectancy at birth in **low-** and **middle-income countries** increased from 40 years in 1950 to 65 years in 1996. Over the same period the average under-5 mortality rate for this group of countries fell from 280 to 80 per 1,000. But these achievements are still considerably below those in **high-income countries**, where average life expectancy at birth is 77 years and the average under-5 mortality rate is 7 per 1,000.

Throughout the 20th century, national indicators of life expectancy have been strongly associated with **GNP per capita**. If you compare Figure 8.1 (Life expectancy at birth, 1995) with Figure 2.1 (GNP per capita, 1995), you will find that in general the higher a country's income per capita, the higher is its life expectancy—although this relationship does not explain all the differences among regions and countries. (See Data Tables 1 and 2 for country-specific data.) The two other factors believed to be the most important for increasing national and regional life expectancies



are improvements in medical technology (with some countries clearly making better use of it than others) and development of and better access to public health services (particularly clean water, sanitation, and food regulation). Education, especially of girls and women, makes a big difference too, because wives and mothers who are knowledgeable about healthier lifestyles play a crucial role in reducing risks to their families' health.

These other factors help explain how most **developing countries** are catching up with **developed countries** in terms of people's health even though they are generally not catching up in terms of per capita income (see Chapter 4). Progress in medical technology, public health ser-

vices, and education allows countries to realize "more health" for a given income than before. For example, in 1900 life expectancy in the United States was about 49 years and income per capita was more than \$4,000. In today's Sub-Saharan Africa life expectancy is more than 50 years even though GNP per capita is still less than \$500.

In Figure 8.1, note that the life expectancy of Russian men in 1995 is strikingly low—only in Sub-Saharan Africa is men's life expectancy shorter—and the gap between the life expectancy of Russian men and Russian women is the widest in the world (14 years). These outcomes are largely explained by a recent dramatic drop in men's life expectancy, from 64 years in 1990 to 58 years in 1994. During those

four years the **death rate** among Russian men age 25–54 increased almost 50 percent (see Chapter 3). This is believed to be the result of reduced incomes, greater uncertainty and increased stress during the transitional period, a decline in the quality of and access to medical care, and, to a large extent, growing alcohol consumption and smoking (see below). Similar but less dramatic changes in male life expectancy took place in a number of other former Soviet Union countries (see Data Table 2).

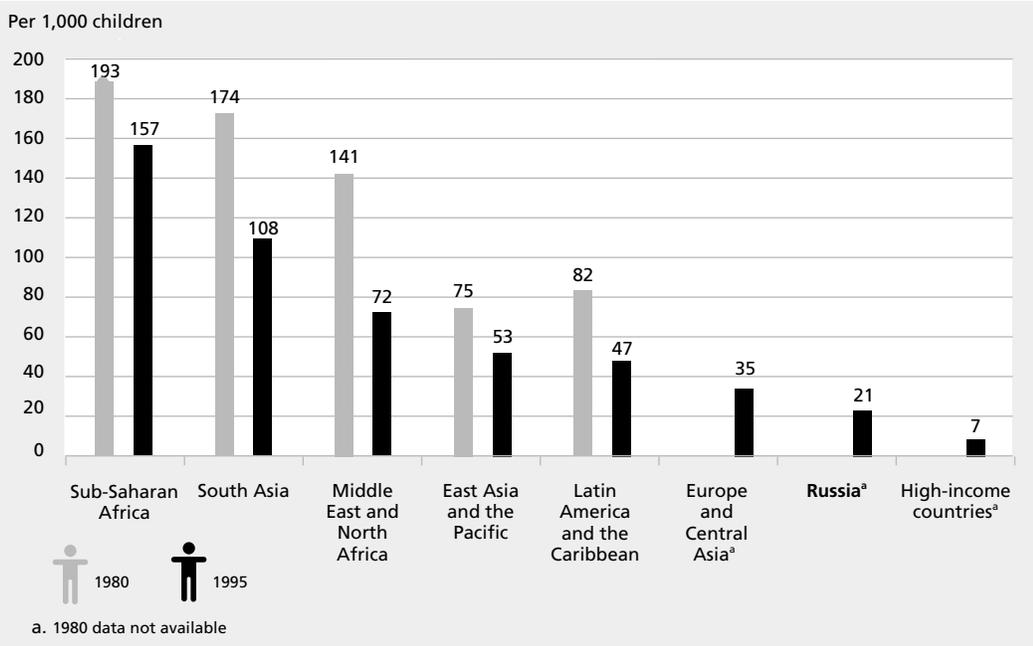
In general, for nearly all countries, life expectancy at birth continued to grow in recent years (see Data Table 2). In developing countries this growth was largely due to much lower under-5 mortality (Figure 8.2). Better control of communicable diseases that are particularly dan-

gerous for children, such as diarrhea and worm infections, accounts for most of the gains. In many countries higher per capita incomes (see Chapter 4 and Data Table 1) also contributed to better nutrition and housing for most families.

Governments of developing countries have invested in improving public health measures (safe drinking water, sanitation, mass immunizations), training medical personnel, building clinics and hospitals, and providing medical care. But much remains to be done.

Malnutrition, especially among women and children, is still a big problem. And communicable, largely preventable diseases still claim millions of lives. For example, the average rate of measles immunization worldwide is just 80 per-

Figure 8.2 Mortality rate of children under age 5, 1980 and 1995



cent, and every year more than 1 million children die of the disease. Many of those children are in Sub-Saharan Africa, where the rate of measles immunization is the lowest—about 60 percent. *(By contrast, in Russia 91 percent of children under one received measles immunization in 1996, which was considerably higher than the 82 percent average for high-income countries.)*

Population Age Structures

The health and longevity of a country's people are reflected in its population age structure—that is, the percentages of different age groups in the population of

the country. A population age structure can be shown by a population pyramid, also known as an age-sex pyramid. In such pyramids a country's population is divided into males and females as well as age groups (for example, five-year age groups, as in Figure 8.3, or one-year age groups, as in Figure 8.4). Figure 8.3 shows population pyramids typical of low- and high-income countries in 1995 and expected to be typical in 2025. Note how these shapes represent higher **birth rates**, higher **death rates** (particularly among children), and lower life expectancies in low-income countries. Think about why in poor countries the base of the pyramid is broader and the pyramid is basically triangular rather

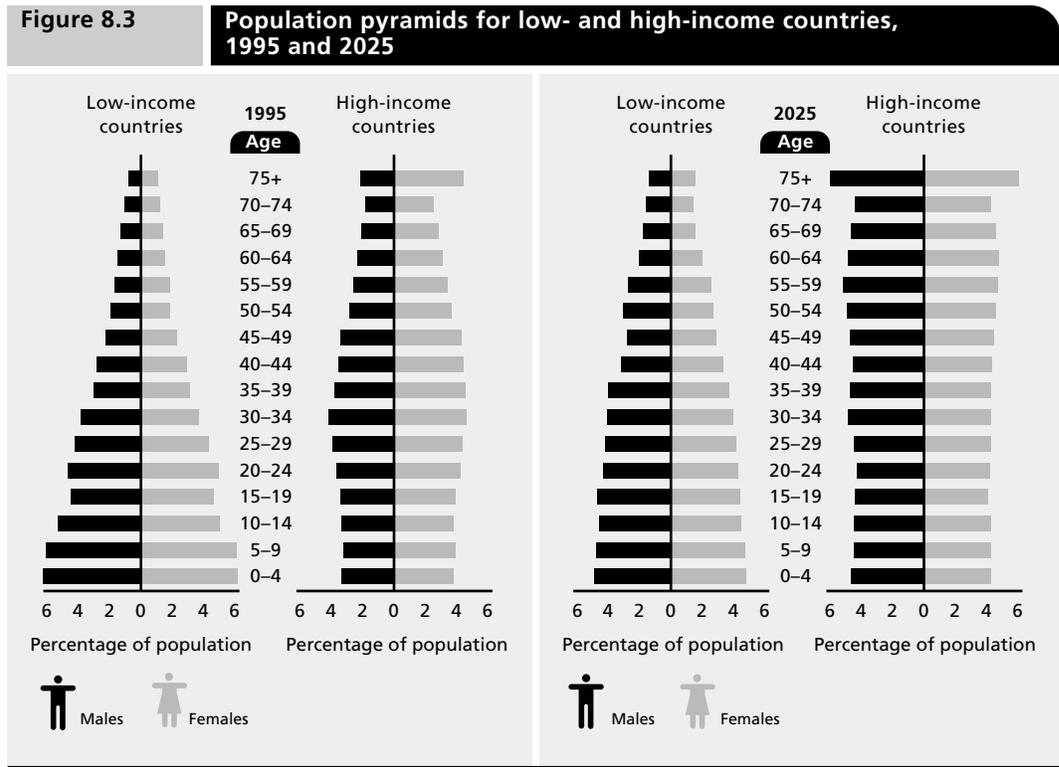
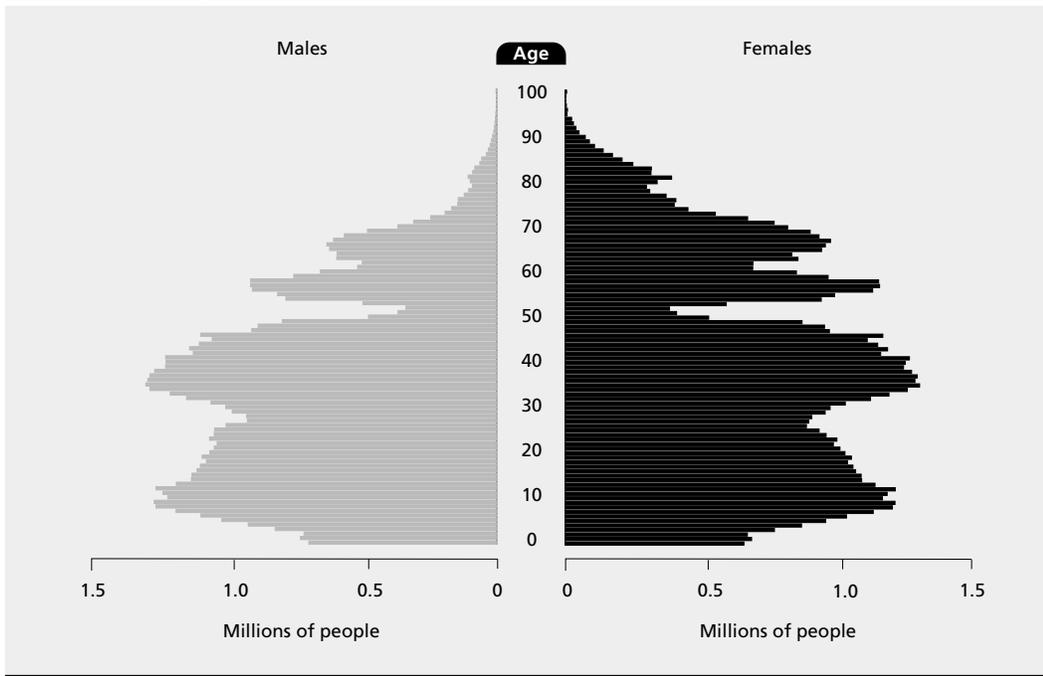


Figure 8.4 Population pyramid for Russia, 1996



than pear-shaped or rectangular as in rich countries. Explain also the changes expected to happen to both pyramids by 2025.

As seen in Figure 8.3, in low-income countries more than one-third of the population is under 15, compared with less than one-fifth in high-income countries. From a demographic perspective, that means that larger age groups are about to enter childbearing age, and the increase in the number of parents will outweigh a decrease in the average number of children per family. This phenomenon, called population momentum, will keep birth rates high despite a drop in **fertility** (see Chapter 3). From a social and economic perspective, a high percentage of children in a population

means that a large portion is too young to work and, in the short run, is dependant on those who do. This is the main reason for the relatively high **age dependency ratio** in most developing countries. While in high-income countries there are roughly 2 people of working age to support each person who is too young or too old to work, in low-income countries this number is around 1.0–1.5.

High-income countries currently face the problem of an aging population—that is, a growing percentage of elderly, non-working people. In 1996 people 60 and above made up 18 percent of the population in these countries, and this portion is expected to grow to almost 22 percent by 2010. In several of these countries

(Belgium, Germany, Greece, Italy, Japan, Sweden) the share of elderly people has already reached or surpassed 21 percent. *(In Russia in 1996 the share of the population 60 and above was 17 percent, projected to grow to 18 percent by 2010, and the age dependency ratio was at the average level for high-income countries.)* An aging population puts greater pressure on a country's pension, health care, and social security systems.

As life expectancy continues to increase in developing countries, they too will face the problem of an aging population (see Figure 8.3). In fact, developing countries are expected to be hit even harder because they are financially less prepared to deal with it, because the rate of growth in life expectancy and therefore population aging is much faster than in developed countries, and because there will be a high dependency ratio of both children and elderly people.

Russia's population pyramid looks very different from those typical of developing and developed countries (compare Figures 8.4 and 8.3). First, it has a number of pronounced indentations that make it look more like a Christmas tree than a pyramid. This is due to sharp decreases in the number of births caused by such tragic events as World War I and the Civil War in Russia (see the smaller age groups around 80), famines during the collectivization of agriculture (see the smaller age groups around 60), and World War II (see the smaller age

groups around 50). Subsequent distortions of the Russian population pyramid in its lower half were caused by the two "demographic echoes" of World War II. The significantly smaller number of people born during the war produced fewer children 25 to 30 years later, as they passed through their prime childbearing years in the early 1970s. And these children, in turn, are the parents of even smaller age groups born in the 1990s (see the bottom of Figure 8.4). According to some estimates, the demographic echo of World War II is responsible for 13 percent of the current sharp decline in birth rates in Russia. The main reasons have to do with the economic and social difficulties of the transitional period.

Another feature of the Russian population structure is its lowest in the world ratio of males to females—88 males per 100 females. This is a result of wars and, more important, of the largest in the world male-female gap in life expectancy described above. Figure 8.4 shows that the gender imbalance is increasingly pronounced in older age groups. While the number of men and women is about equal at age 36, at age 49 the ratio of males to females is already 90 per 100. At age 64 it is 70 per 100, and at age 71 it is just 40 per 100. In Russia there are almost two women per one man 60 and above (194 females per 100 males), while in high-income countries this gender imbalance among the elderly is much smaller (133 females per 100 males). In low-income countries the imbalance is even smaller

(104 females per 100 males), but among the reasons for this seeming “advantage” of poor countries are higher maternal mortality and gender discrimination, including discrimination in access to health care.

Future Challenges

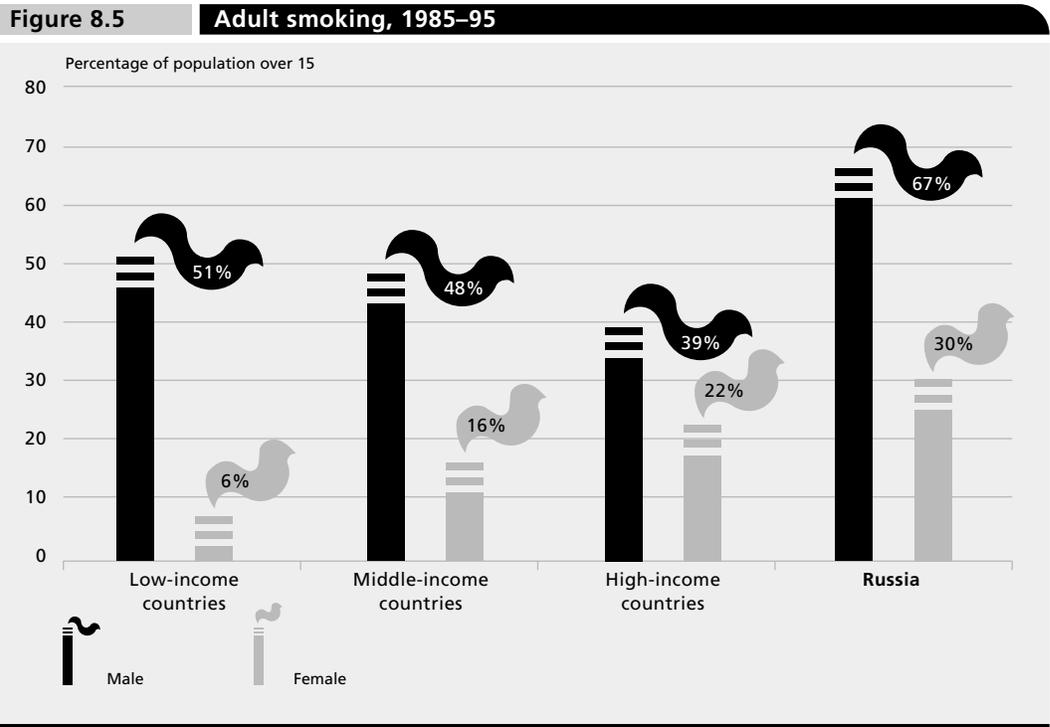
As the health of the world population has improved, the burden of disease has declined. Simultaneously, the structure of disease has shifted rapidly from a preponderance of communicable disease (diarrhea, worm infections, measles), which are the main health risks for infants and children, to a preponderance of noncommunicable disease (heart and circulatory disease, cancer) that mostly affect adults. While there are inexpensive and effective ways to eliminate most communicable diseases, noncommunicable diseases are generally much more expensive to treat. Moreover, substantially reducing their incidence will require changing people’s behaviors and lifestyles.

The importance of lifestyle choices can be illustrated by the health gap between Eastern and Western Europe. The largest contributors to this health gap are heart attacks and strokes, for which the main risk factors include unhealthy diet, lack of exercise, excessive consumption of alcohol, and smoking. All these factors, particularly smoking, are more prevalent

in Eastern Europe, *including Russia. The data show that Russian men are the world’s heaviest smokers next only to men in the Republic of Korea, and Russian women are among the heaviest smokers (Figure 8.5 and Data Table 2).*

Cigarette smoke does more damage to human health than all air pollutants combined. Smoking is hazardous not only to smokers, about half of whom die prematurely from tobacco-related diseases including cancer, heart disease, and respiratory conditions, but also to “passive” smokers (those inhaling second-hand smoke). According to some estimates, passive smokers increase their risk of cancer by 30 percent and their risk of heart disease by 34 percent.

The governments of most developed countries have made efforts to reduce smoking and so lower its costs to society by introducing tobacco taxes, limiting tobacco advertising, and educating people about the risks of smoking. Cigarette taxes are highest in Western Europe. According to a 1998 report by the Worldwatch Institute, smokers in Norway pay \$5.23 in taxes per pack of cigarettes, which is 74 percent of the total price. And in the United Kingdom smokers pay \$4.30 in taxes, which is 82 percent of the total price. Experience in many countries has shown that tobacco taxes are effective in discouraging smoking: a 10 percent increase in cigarette prices leads to a 5 percent decrease in



smoking among adults and a 6-8 percent decrease among young adults (age 15 to 21), who usually have less disposable income.

According to the same report, while in Western Europe and the United States the number of smokers is declining, in most developing countries smoking is on the rise, particularly among women and young people. European and U.S. tobacco firms, facing declining demand in their home countries, have managed

to increase sales by entering the under-regulated and underinformed markets of less developed countries. In the past 10 years exports of cigarettes as a share of production have doubled to 60 percent in the United Kingdom and 30 percent in the United States, the two largest exporters. If current smoking trends persist, the number of tobacco-related deaths worldwide will soar from 3 million a year today to 10 million a year in 2020, with 70 percent of the deaths occurring in the developing world.