2.5 HUMAN DEVELOPMENT AND HEALTH

*P*revious National Reports attempted to clarify the issues and the importance of measuring human development. The authors analyzed the principal indices of human development through equality of opportunities for females and males, regional differences; they compared them with other life quality parameters. A stable component of the Report was the calculation of the human development index (HDI), the most important worldwide comparable indicator of human development.

Conclusions of the preceding Reports confirmed the growing importance of measuring human development to enable the adoption of appropriate development strategies. This edition of the National Report addresses human health and anything that may affect it. Health and protection thereof is an issue rather sensitive with respect to the monitoring of the relevant parameters. The scope of the available statistical parameters relating to health is rather broad, although mostly focusing on so-called negative health parameters, including morbidity and mortality. In recent times, however, it was mainly the World Health Organization (WHO) that has introduced improvements of parameters that more adequately describe health as an opportunity to live a long and healthy life.

The correlation between health and human development is quite evident; the more sound the health of a human is, the more opportunities and chances for development he or she enjoys. In other words, the prospects of reaching a higher quality of life grow with one's health. In general terms, the same applies vice versa. For example, life quality improvements are due to improved education and income; these are usually accompanied by improvements in health. The objective of this chapter is to point to the importance of a variety of health-related factors for the health condition and quality of human life. The first part deals with an analysis of the actual development of major human development parameters.

2.5.1 Basic Human Development Indicators

The Human development index (HDI) serves as a comprehensive measure of the achieved level of human development in a given country. It is used mainly for international comparisons, thus the calculation of the index is narrowed to four generally available and comparable indicators of the three most important dimensions of life.

1. Long and Healthy Life   - *Life expectancy at birth*
2. Education   - *Adult literacy rate (2/3 weight)*
                - Combined primary, secondary and tertiary gross enrolment ratio (1/3 weight)
3. Standard of Living   - *Gross domestic product adjusted for purchasing power parity*

For the construction of the index, fixed minimum and maximum values have been established for each indicators. Table 2.9 includes values from 2000 and 2001.

1. Life Expectancy at Birth[52]:   25 years and 85 years;
2. Adult Literacy Rate[53]:   0 percent and 100 percent;
3. Combined Gross Enrolment Ratio[54]:   0 percent and 100 percent;
4. Real GDP Per Capita (PPP$)[55]:   100 and $40,000.

Table 2.9
Basic Parameters for HDI Calculation for the Slovak Republic (2000-2001)

Indicators	2000	2001 [a]
Life expectancy at birth (years)	73.18	73.40
Adult literacy rate (%)	99.50	99.90
Combined primary, secondary and tertiary enrolment ratio (%)	74.91	74.91
Real per capita gross domestic product (PPP$)	10,270	12,380

Note: a. Data for the preceding year were used if more recent data were not available.
Source: Statistical Office of the Slovak Republic.

[52] The number of years a new-born infant would live if prevailing patterns of mortality at the time of birth were to stay the same throughout the child's life.
[53] The percentage of people aged 15 and above who can, with understanding, both read and write a short, simple statement on their everyday life.
[54] The number of students enrolled in a level of education, regardless of age, as a percentage of the population of official school age for that level. The combined gross primary, secondary and tertiary enrolment ratio refers to the number of students at all these levels as a percentage of the population of official school age for these levels.
[55] For this purpose, the GDP per capita in local currency is divided by the purchasing power parity (PPP), defined as the number of units of the country's currency required to buy the same amount of goods and services in the domestic market as one dollar would buy in the United States. PPP allows a standard comparison of real price levels between countries. Normal exchange rates may over- or undervalue purchasing power.

Three partial indices (life expectancy index, education index, and GDP index) are calculated as the actual less minimal value to limit value difference ratio. Education index is comprised of two-thirds literacy index and one-third school enrolment index. The resulting HDI is a simple arithmetic mean of the partial indices (Table 2.10).

The final value of the index ranges between 0 and 1, enabling comparisons with other countries. The difference between the achieved and maximum value shows how much the country in question remains behind the maximum value of 1 and/or how much improvement is desired. It remains a challenge for every country to find ways how to reduce this difference.

Table 2.10
Partial Indices and Final HDI for the Slovak Republic (2000-2001)

Indices	2000	2001
Life expectancy index	0.803	0.807
Educational attainment index	0.913	0.916
Adult literacy index	0.995	0.999
Gross enrolment index	0.749	0.749
Adjusted real GDP index	0.773	0.804
Human Development Index HDI	**0.830**	**0.842**

Source: Author's calculation.

Tables 2.9 and 2.10 are based on domestic statistical sources. For the international HDI ranking, standardized data from several organizations are used (UN, UNICEF, WHO, World Bank), which use their own surveys or national data sources. Due to the harmonization of data, slight deviations may occur between domestic and international sources.

By its human development, the Slovak Republic ranked 35th among 162 countries of the world in 2001.[56] The 2002 international HDI comparison included 173 countries, and Slovakia dropped to thirty-six. By its ranking in both years, Slovakia confirmed its long-term position among countries with a high degree of human development. Compared to preceding surveys, Slovakia could overtake the South American countries of Uruguay and Chile, as well as Kuwait. Slovakia could maintain its third position, after Slovenia and the Czech Republic, among the former Communist block countries, although Hungary and Poland tend to grow at a faster rate. This is suggested by GDP development as well as by higher proportions of youth attending schools in neighboring countries. The higher incomes were the reason why Slovakia had to give up its ranking of thirty-five to Hungary in 2002.[57]

One of the basic principles of the human development concept concerns equality of chances regardless of external features of the human. The Gender-related Development Index (GDI) was established by UNDP in 1995. GDI measures the quality of life using the same indicators as HDI, but adjusts the result for gender inequality between men and women.

The calculation of the index is slightly more complex than of the Human Development Index.[58] It may be stated that the partial indices get adjusted, based on the proportions of the genders in the population and according to the ratio of average wages of women and men. According to statistical figures, equality of chances for human development with respect to women and men would mean equality of the values of HDI and GDI. Based on international investigations, GDI has lower values than HDI in all countries. This means that there is not full equality of women and men anywhere in the world.[59] It should be pointed out at the same time that inequality need not necessarily mean more favorable conditions for men as discussions on gender issues are usually interpreted. Slovakia's position with respect to gender comparison is rather similar to the situation that prevails in a majority of developed countries; women present with the biological advantage of longer lives (women live approximately 11 percent longer than men), they show a slight prevalence in proportions of studying youth (there are approximately 3 studying women more than men in every 100 men and women aged between 6 and 22 years), and their share on the generation of domestic product is about two thirds (average wages of women reach three quarters of the average wages of men).

The Slovak Republic achieves a slightly better ranking by GDI than by HDI. Table 2.11 shows the basic indicators of human development by genders.

---

[56] Source: UNDP: *Human Development Report 2001*. New York (2001).
[57] See the international comparison of HDI in the Statistical annex.
[58] For detailed methodology of GDI calculation, see e.g., UNDP: Human Development Report 2002. New York (2002).
[59] See international comparison of GDI in the Statistical annex.

Table 2.11
Basic Parameters for GDI Calculation for the Slovak Republic (2000-2001)

Indicators	2000		2001 [a]	
	Women	**Men**	**Women**	**Men**
Life expectancy at birth (years)	77.22	69.14	77.60	69.54
Adult literacy rate (%)	99.50	99.50	99.90	99.90
Combined primary, secondary and tertiary enrolment ratio (%)	76.33	73.55	76.33	73.55
Real GDP per capita [b] (PPP$)	7,925	12,750	9,545	15,383

Note: *a. Data from preceding year were used if more recent data were unavailable. b. Author's calculation using the UNDP methodology. For details, see e.g.: UNDP: Human Development Report 2002.*
Source: *Statistical Office of the Slovak Republic.*

The calculation of the gender-related index is along the same lines as that of the human development index, with partial indices – life expectancy, education and income – being adjusted based on the proportions of men and women in the population. The calculation of the income index is based on the women-to-men wages ratio and their shares on the economically active population (see Table 2.12).

Table 2.12
Partial Indices and Final GDI for the Slovak Republic (2000-2001)

Indices	2000	2001
Equally distributed life expectancy index	0.802	0.809
Equally distributed educational attainment index	0.913	0.916
Equally distributes income index	0.766	0.798
Gender–related Development Index GDI	**0.827**	**0.841**

Source: Author's calculation.

2.5.2 Health and Human Development

Longevity, a parameter of health, constitutes one-third the weight of both basic human development indicators. Changes in the patterns of mortality in a given country are displayed in the final indices. This is confirmed by HDI trends in most countries of the world, which have recorded significant HDI increases due to remarkable prolongation of life during the past twenty-five years. Except for Hungary, all countries ranked by a higher HDI than Slovakia in 2002, achieved a greater extension of the life span in the past three decades than did Slovakia. Many countries with a similar baseline position, including Malta, Cyprus or even Slovenia, achieved longevity increments two to three times that achieved by Slovakia. Similarly as in Hungary, Poland or Romania, life expectancy also tended to stagnate in Slovakia; several of the former Soviet Union countries even recorded a decrease.

Table 2.13
*Development of Life Expectancy in the Past 30 years*

HDI rank in 2002	Life expectancy (years)			Human Development Index	
	1970-1975	**1995-2000**	**change(%)**	**1975**	**2000**
4. Belgium	71,4	77,9	+9,1	0,844	0,939
5. Australia	71,7	78,7	+9,8	0,844	0,939
10. Finland	70,7	77,2	+9,2	0,836	0,930
15. Austria	70,6	77,7	+10,1	0,840	0,926
16. Luxembourg	70,7	77,0	+8,9	0,831	0,925
25. Singapore	69,5	77,1	+10,9	0,722	0,885
29. Slovenia	69,8	75,0	+7,4	0,843 [c]	0,879
30. Malta	70,6	77,6	+9,9	0,731	0,875
33. Czech Republic	70,1	74,3	+6,0	0,835 [c]	0,849
35. Hungary	69,3	70,7	+2,0	0,775	0,835
36. Slovakia	*70,0*	*72,8*	*+4,0*	*0,813* [b]	*0,835*
37. Poland	70,4	72,8	+3,4	0,792 [c]	0,833
49. Lithuania	71,3	71,4	+0,1	0,816 [c]	0,808
53. Latvia	70,1	69,6	-0,7	0,790 [a]	0,800
60. Russian Fed.	69,7	66,1	-5,2	0,809 [a]	0,781
62. Bulgaria	71,0	70,8	-0,3	0,763 [a]	0,779
63. Romania	69,2	69,8	+0,9	0,755	0,775
80. Ukraine	70,1	68,1	-2,9	0,795 [c]	0,748

Note: *a. 1990 figure. b. 1985 figure. c. 1980 figure.*
Source: *UNDP: Human Development Report 2002, Author's calculations.*

Table 2.13 illustrates the different development of life span in countries with approximately identical baseline situation a quarter of a century ago. During the same period of time, several countries classified by economists among developing countries achieved an extension of life expectancy by more than ten years and markedly overtook Slovakia (e.g., Chile 63.4-74.9; United Arab Emirates 62.5-74.6; but also South Korea 62.6-74.3). Both preventive measures (e.g., reduction of smoking rates) and progress in medical treatment (e.g., open-heart surgeries, early treatment of hypertension, etc.) contributed to a successful prolongation of life expectancy. The data in Table 2.13 confirms the positive correlation between health and human development.

An adequate, quality health care has a significant effect on the health condition of the population. Data from developing countries provide evidence that per capita expenditures below sixty US dollars per year cannot secure the provision of adequate health care. Inverse limits exist as well; increasing expenditures on the public health system beyond USD 1,000-1,500 per capita per year is not associated with increases of healthy life expectancy.[60] The significant relationship between expenditures on health services and health condition is illustrated by Graph 2.10. The expectancy of a longer life in adequate health is higher in countries that invest higher amounts to the public health system. Efficiency of the public health system, i.e., the ratio of invested resources and quality of services, remains an important, although hardly measurable precondition.

Graph 2.10
Health Care Expenditures and Healthy Life

Source : WHO (2002).
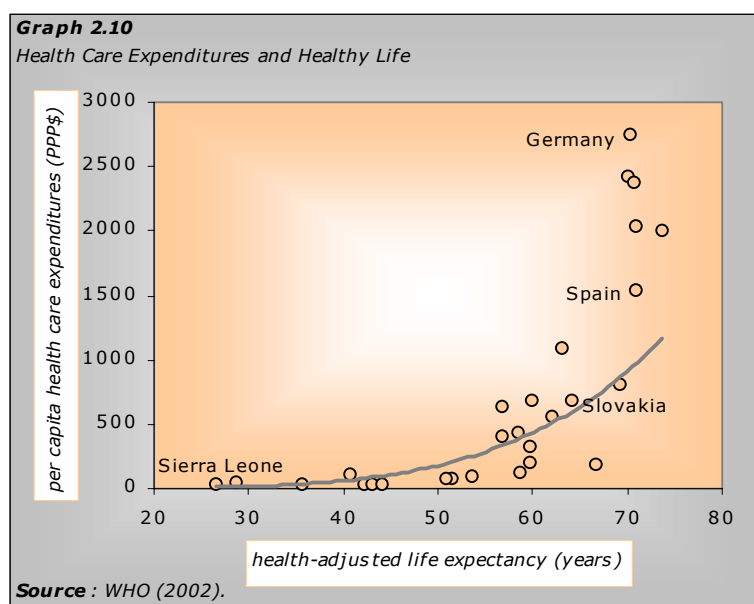
In recent years, the World Health Organization introduced new health parameters such as health-adjusted life expectancy or simply healthy life expectancy (HALE)[61] or disability-adjusted life years, DALYs. Compared with conventional life expectancy, HALE includes only expected life years in health, i.e., it is adjusted by years lived in a bad health condition (disease, disability, etc.).

Analyses by the World Health Organization have confirmed that tobacco smoking and consumption are among the major risk factors of health. WHO has identified smoking as the main factor of the development and spreading in developed countries of diseases, such as cancer of the respiratory system, chronic bronchitis, and virtually all vascular diseases.[62] According to WHO, additional significant factors of health, which are relevant for also for Slovakia, include high alcohol consumption, high blood pressure, and high levels of blood lipids (Table 2.14).

---

[60] Source: Ginter (2001).
[61] Originally, it was referred to as DALE (disability-adjusted life expectancy), the change occurred in 2002 in connection with an adjustment in the calculation of the parameter. For details, see WHO: World Health Report 2002. Reducing Risks, Promoting Healthy Life (2002).
[62] For details, see WHO (2002).

Table 2.14
Leading 10 Selected Risk Factors of Health in Developed Countries (in percent of the causes of the development of diseases, as measured through DALYs [a]) and Leading 10 Diseases and Injuries

Risk factor	% DALYs	Disease or injury	% DALYs
Tobacco	12.2	Ischaemic heart disease	9.4
Blood pressure	10.9	Unipolar depressive disorders	7.2
Alcohol	9.2	Cerebrovascular disease	6.0
Cholesterol	7.6	Alcohol use disorders	3.5
Overweight	7.4	Dementia, nervous system disorders	3.0
Low fruit and vegetable intake	3.9	Deafness	2.8
Physical inactivity	3.3	Chronic obstructive pulmonary disease	2.6
Illicit drugs	1.8	Road traffic injury	2.5
Unsafe sex	0.8	Osteoarthritis [c]	2.5
Iron deficiency [b]	0.7	Trachea, bronchus and lung cancers	2.4

Note: a. DALYs – disability-adjusted life years. b. Diseases connected with pregnancy and perinatal period, as well as with direct consequences of anemia. c. Inflammation of bone joints.
Source: WHO (2002).

The aforementioned risk factors reflect the lifestyles of the population. They represent a subset of a larger group of socio-economic health effects that include variables such as the level of education, position in the labor market, and risk of poverty. Unemployment, affecting mainly people with lower levels or no education at all, represents one of the major reasons for the occurrence and overall range of poverty. These phenomena were shown to correlate with the health condition, as evidenced by, for example, the multifactorial analysis of a comparison of Slovakia's districts.[63] Life expectancy was shorter in districts with higher proportions of population with only basic levels of education compared to districts showing the lowest proportions of population with basic levels of education.[64] The preceding National Report pointed out the worsened access to education and information as compared to men makes the biological advantage of women to live longer lives disappear. In countries where women are presented with fewer opportunities to become educated in comparison with men, the life span of both genders becomes equal, and women in such countries live relatively shorter lives than those in other countries.[65]

Box 2.6
Determinants of Health

As mentioned in the other sections of this Report, health is the result of the effects of numerous determinants. Some of these health factors are of a more universal effect (such as health care), while others act, even if being of identical intensity, differently in different parts of the world (such as environmental effects). The weights of the various health determinants are variable and show a number of deviations. There is a certain consensus among experts dealing with human health issues concerning positive and/or negative effects. Assessments of health determinants in isolation and seeking for simple causative relationships is however questionable since almost always there is a whole complex of effects that have to be taken into account in parallel. This has been confirmed by domestic surveys focusing on regional differences in health condition, as well as by international comparisons.

Two simple examples may illustrate the point: 1. Were environment the only significant factor of health condition or life span, the population of the district Veľký Krtíš would live significantly longer than the population of Košice. 2. Taking cigarette consumption as the key reason for the shortening of the life span, the population of Greece would die at a substantially younger age than the population of the Ukraine. These assumptions do not hold in any of the cases. According to the available official data, the population of Košice live 2-3 years longer than that of Veľký Krtíš, in spite of the significantly worse environmental pollution. Greeks who consume officially three times more cigarettes per capita live almost 10 years longer than Ukrainians (consumption of illegally produced or imported cigarettes not included).

The factors mentioned are part of the overall effects on health, but are not key for the given comparisons. The weights of the individual factors with respect to the overall health condition may be assumed to vary within a relatively narrow space and time.
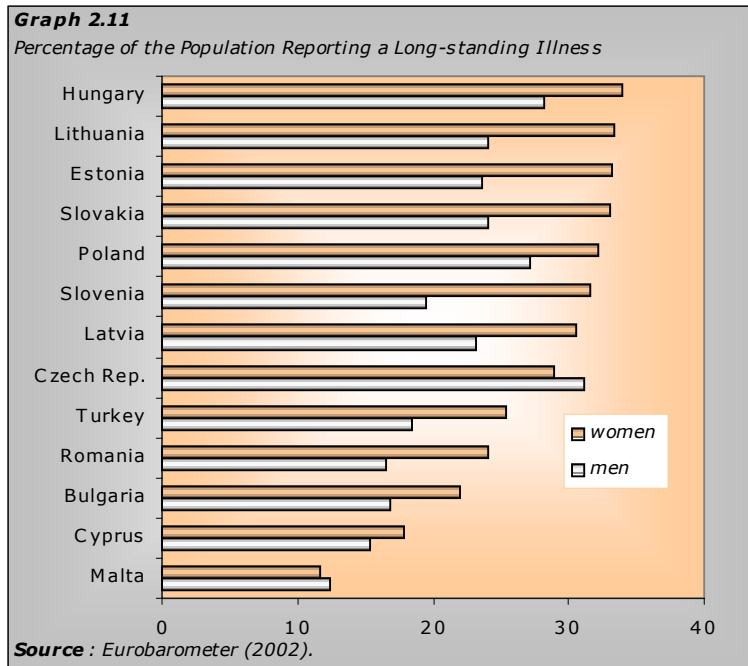

Apart from official morbidity and mortality data surveys of subjective assessment of the health condition by people themselves provide a meaningful basis for the analysis of the effects of health on life quality. Graph 2.11 suggests that proportions of the population in the EU candidate countries that assess themselves as being in a long-term condition of poor health are relatively high. With some simplification we may state that there is a gradient of positive perception of one's own health growing in this part of Europe towards the south. In a majority of the countries in the CEE region, negative assessment of health prevails in women. A comparison with WHO data concerning expectation of lost healthy years at

---

[63] Source: Demeš – Ginter – Kováč (1998).
[64] For details, see National Human Development Report Slovakia 1998, pp. 143-144, UNDP, CPHR, 1998.
[65] For details, see National Human Development Report Slovak Republic 2000, pp. 113-114, UNDP, CPHR, 2000.

birth clearly shows that comparable data on disability-adjusted life years correlate with inter-gender differences in subjective health assessment.

Graph 2.11
Percentage of the Population Reporting a Long-standing Illness

Source : Eurobarometer (2002).

It may be added to the generally accepted and globally applicable notion that women as a rule have longer life expectancy than men that, compared to men, women in developed countries spend relatively larger portions of their lives in bad health. In countries with the lowest levels of human development and smaller or minimal differences between males and females in life expectancy, it is men who lose a larger portion of their lives to poor health.

There are new terms being introduced to discussions on the quality of life, such as the already mentioned HALE, but also the term of health-related quality of life (HRQL). Experts believe that when the focus is on the analysis of the impact of diseases upon the health condition and the well-being of human beings – patients, health-related quality of life is the most appropriate parameter. HRQL includes emotional, physical and social feelings that reflect the subjective assessment by the individual and his/her response to disease. Health experts use HRQL to measure the impacts of various disturbances, conditions and diseases upon various population groups. Monitoring of HRQL in various populations helps identify groups with poor physical or mental health and direct measures and policies towards improvement of their health.

Health is a dynamic rather than constant value. Investigations of various health determinants will thus have to be reserved sufficient and regular space. Equally important will be to take the knowledge from scientific institutions, translate them into an intelligible language and present them to the public at large. Informed individuals namely have more chances to make the right decisions with respect to his/her own health.