World Health Report 2000: The Position of Slovak Republic

Ginter E

Správa o zdravotnom stave sveta 2000: postavenie Slovenskej republiky

Abstract

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World Health Report 2000: the Position of Slovak Republic
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The World Health Organization (WHO) published the analysis of the health systems in 191 member states of WHO with important data (mostly for the year 1999) on probability of dying under age 5 years and between ages 15 and 59 years, life expectancy at birth, disability-adjusted life expectancy – DALE which is defined as the expectation of life lived in equivalent full health, responsiveness of health system, fairness of financial contribution and overall health system attainment. The last parameter was based on five weighted components: overall level of population health, health inequalities within the population, level of health system responsiveness, distribution of responsiveness between population and the distribution of health system financial burden within the population. Between 149 countries with more than 1 million inhabitants the rank for Slovakia (30th) is not bad and is close to Croatia and Poland. The estimates of overall health system performance (i.e. how efficiently health systems translate financial expenditure into health) belong to the problematic part of the report:. In this parameter the health system of USA ranks much lower than Turkey or Tunisia and Slovakia ranks lower than Albania. The authors did not take into consideration, that the health of population depends not only on health care and health expenditure but on many other factors, such as life style, nutrition, pollution, etc., which are not influenced by expenditure into health system. *(Tab. 2, Fig. 6, Ref. 15.)*
Key words: WHO Report 2000, disability-adjusted life expectancy (DALE), health system attainment, financing, performance, Slovakia.

Abstrakt

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Svetová zdravotnícka organizácia (WHO) publikovala analýzu stavu zdravotných systémov v 191 členských štátoch WHO. Táto analýza obsahuje dôležité údaje (prevažne pre rok 1999): pravdepodobnosť úmrtia vo veku menej ako 5 rokov a 15—59 rokov, očakávaná dĺžka života, odpovednosť zdravotného systému, jeho financovanie a celková dosiahnutá úroveň zdravotného systému. Posledný parameter je založený na piatich vážených zložkách: celková úroveň zdravia, nerovnosti zdravotného stavu v populácii, úroveň odpovednosti zdravotného systému, distribúcia odpovednosti naprieč populáciou a distribúcia finančnej záťaže zdravotného systému naprieč populáciou. V tomto parametre sa Slovenská republika umiestnila medzi 149 štátmi s obyvateľstvom nad jeden milión na celkovo dobrom 30. mieste blízko Chorvátska a Poľska. Problematickou časťou správy je výpočet celkovej účinnosti zdravotného systému, ktorý má určovať, ako účinne sa financovanie zdravotného systému premieta do zdravotného stavu obyvateľstva. V tomto parametre sa USA dostalo pod Turecko či Tunis a Slovensko pod Albániu. Autori týchto výpočtov nebrali do úvahy, že zdravotný stav populácie závisí nielen od zdravotnej starostlivosti a výdavkov na zdravie, ale aj od mnohých ďalších faktorov, ako je životný štýl, výživa, znečistené prostredie a podobne, ktoré nie sú ovplyvniteľné financovaním zdravotníctva. *(Tab. 2, obr. 6, lit. 15.)*

Kľúčové slová: Správa WHO 2000, nádej na dĺžku života v zdraví (DALE), úroveň zdravotného systému, financovanie, účinnosť, Slovensko.

The World Health Organization (WHO) has presented the first analysis of the health systems in 191 member states of WHO. The results of this analysis were summarized in World Health Report 2000 (1) with Statistical Annex containing important information, e.g.:

— Total fertility rate, probability of dying under age 5 years and between ages 15 and 59 years, life expectancy at birth and other demographic parameters for each of 191 member states for the year 1999;

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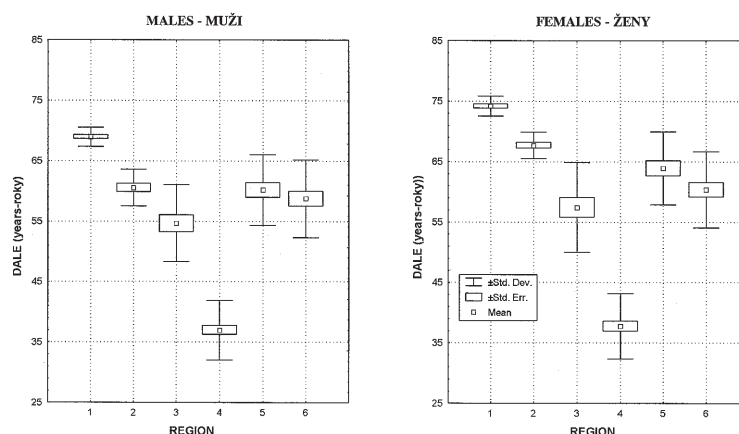
Fig. 1. Regional differences in male and female expectations of life lived in equivalent full health. Explanation to regions:
1. **Established market economies (21 countries)**
2. **Formerly socialistic economies in Europe (19 countries)**
3. **Asia and islands, India and China inclusive (20 countries)**
4. **Sub-Saharan ("black") Africa (40 countries)**
5. **Latin America and Caribbean (22 countries)**
6. **Middle Eastern crescent (North Africa, Middle East and some Asian countries with islamic influence) (27 countries)**
Obr. 1. Regionálne rozdiely v nádeji na dožitie mužov a žien v plnom zdraví. Vysvetlivky k regiónom:
1. **Rozvinuté trhové ekonomiky (21 štátov)**
2. **Bývalé socialistické ekonomiky v Európe (19 štátov)**
3. **Ázia vrátane Indie a Číny plus ostrovy (20 krajín)**
4. **Africký región pod Saharou (40 krajín)**
5. **Latinská Amerika a Karibik (22 krajín)**
6. **Stredovýchodný okruh (Severná Afrika, Stredný Východ a niektoré ázijské krajiny s islamským vplyvom) (27 štátov)**

— Deaths by cause, sex and mortality stratum and the burden of disease in disability-adjusted life years (DALYs) in six WHO Regions (not in individual countries) for the year 1999;
— Disability-adjusted life expectancy (DALE) for male and female population at birth and at age 60 for each of 191 member states for the year 1999. DALE is defined as the expectation of life lived in equivalent full health;
— Index of equality of child survival;
— Responsiveness of health system: dignity, respect of persons, prompt attention, quality of basic amenities, access to social support networks and choice of care provider;
— Distribution of responsiveness which identifies groups who were disadvantaged with regard to responsiveness (e.g. poor people, old people, women and racially disadvantaged groups);
— Fairness of financial contribution;
— The index of performance defined as the ratio of achieved health level and the health level which could be achieved by the most efficient health system;
— Overall performance of health system based on the ratio of overall health system achievement to health system expenditure.

Overall health system attainment is probably the most important output of the World Health Report 2000. This parameter was based on five weighted components: overall level of population health, health inequalities within the population, level of health system responsiveness, distribution of responsiveness between population and the distribution of health system financial burden within the population (i.e. who pays the costs).

Unfortunately, newspapers and popular magazines simplified the results of this excellent study. The calculated rank of health system performance for U.S.A. (rank 72) was interpreted in the sense that health care and health status of Americans is lower than in Colombia, Morocco or Costa Rica. Similarly, the rank 88 for Slovakia was interpreted in the sense that health care and health status of Slovakia is substantially lower than that of Thailand, Tunisia or Albania. The aim of this review is to present in a simple form the contemporary health situation in the world focused on formerly socialist economies of Europe and on Slovak Republic.

Methods

In the original WHO database data from all 191 member states were included (1). Some of these countries have very small population (e.g. Niue 2 000 people). To avoid statistical errors, in our database the countries with less than 1 million inhabitants were excluded and due to this the number of countries declined to 149. According to Murray and Lopez (2) the countries were divided into 6 groups:
1. Established market economies (21 countries)
2. Formerly socialistic economies in Europe (19 countries)
3. Asia and islands, India and China inclusive (20 countries)
4. Sub-Saharan ("black") Africa (40 countries)
5. Latin America and Caribbean (22 countries)
6. Middle Eastern crescent (North Africa, Middle East and some Asian countries with islamic influence) (27 countries)

All data from the original source (1) remained unchanged. The latest WHO database Health for All, updated in June 2000 (3) was the source for some data for European countries. As the premature mortality is considered as the most important information, SDR for the age interval 0-64 years was used. SDR is the age-standardized death rate calculated using the direct method, i.e. it represents what the crude death rate would have been been if the population had the same age distribution as the standard European population.

All data were processed using standard statistical methods in STATISTICA 5.0.

Results and Discussion

Table 1 summarizes the rank of overall health system attainment in the first 100 countries with population over one million. The countries from the rank 101 to 149 belong mostly to the region of Sub-Saharan Africa and Asia. The rank was based on five weighted components: the level of health (25 %), distribution of health (25 %), level of responsiveness (12,5 %), distribution of responsiveness (12,5 %) and fairness of financial contribution (25 %). It should be stressed that there are multiple and often conflicting sources of information on many health indicators from national and international agencies. Moreover, there are many countries for which there are no published estimates. Therefore, the mean values and uncertainty intervals have been estimated for overall health system attainment using the uncertainty intervals for each of the 5 components. The rank of uncertainty is often very great, e.g. between 7 to 24 for U.S.A. or between 64 to 105 (!) for Armenia. The rank for Slovakia (30th) is not bad and is close to Croatia and Poland.

Where information on the incidence, prevalence, duration and severity of non-fatal health outcomes is available, a variety of health indicators, different from the "classical" life expectancy can be calculated. In the last years, DALE (=disability-adjusted life expectancy) is most popular. DALE is defined as the expectation of life lived in equivalent full health or more simply Healthy Life Expectancy (expressed in years of healthy life). Figure 1 shows the mean values of DALE for the male and female population in the six WHO regions (2). As expected, the highest DALE for males, almost 69 years, was found in established market economies. This value is significantly higher in comparison to all 5 other regions (P = 0,0000). Formerly socialistic economies in Europe and Latin America are on the second place. DALE of males living in Sub-Saharan Africa is very low, about 37 years (P = 0,0000 in comparison to all other regions). The data for female population (right side of Figure 1) are higher than for males and their distribution in the 6 regions is similar to men.

What is the chief reason for lower health-status (lower life expectancy at birth and DALE) in formerly socialistic economies in comparison to established market economies? Although the probability of dying under age 5 years is somewhat higher in formerly socialistic economies, this difference is in comparison to established market economies not significant (not shown). Very high probability of dying between ages 15 and 59 years, especially in male population, is the chief reason of low DALE in formerly socialistic economies. Probability of dying between ages 15 and 59 years in 1999 was in this region more than two fold higher than in established market economies (P=0,00001, not shown).

Tab. 1. Overall health system attainment (WHO index, estimates for 1997).

Tab. 1. Celková úroveň zdravotného systému (poradie WHO pre rok 1997).

Rank	Country Krajina	Rank	Country Krajina
1	Japan	51	Venezuela
2	Switzerland	52	Dominican Republic
3	Norway	**53**	**Latvia**
4	Sweden	54	Jamaica
5	France	55	Panama
6	Canada	56	Romania
7	Netherland	57	Paraguay
8	United Kingdom	58	Bulgaria
9	Austria	59	Georgia
10	Australia	60	Tunisia
11	Italy	**61**	**Bosnia and Herzegovina**
12	Belgium	62	Sri Lanka
13	Germany	63	Armenia
14	United States of America	64	Jordan
15	Spain	**65**	**Albania**
16	Denmark	**66**	**Macedonia**
17	Finland	67	Mauritius
18	Grece	**68**	**Republic of Moldova**
19	Israel	69	Lebanon
20	Ireland	70	Morocco
21	New Zealand	**71**	**Yugoslavia**
22	Singapore	72	Turkey
23	**Slovenia**	73	Libyan Arab Jamahiriya
24	**Czech Republic**	74	Algeria
25	Portugal	**75**	**Russian Federation**
26	Chile	76	Nicarugua
27	**Poland**	77	Azerbaijan
28	Republic of Korea	78	Indonesia
29	**Croatia**	79	Ecuador
30	**Slovakia**	80	Uzbekistan
31	Cuba	81	Egypt
32	Colombia	82	Syrian Arab Republic
33	**Hungary**	83	Guatemala
34	United Arab Emirates	84	Iran, Islamic Republic of
35	Costa Rica	85	Peru
36	Kuwait	86	Bolivia
37	**Estonia**	87	Senegal
38	Argentina	88	India
39	Uruguay	89	El Salvador
40	Mexico	90	Iraq
41	**Lithuania**	91	Brazil
42	**Belarus**	92	Tajikistan
43	Philippines	93	Honduras
44	Malaysia	94	Turkmenistan
45	Trinidad and Tobago	95	Bangladesh
46	Thailand	96	China
47	Oman	97	Pakistan
48	**Ukraine**	98	Kyrgyzstan
49	Saudi Arabia	99	Mongolia
50	Kazakhstan	100	Ghana

In 1990, the risk of death between 15 and 59 years for men was higher in Poland, Czechoslovakia and Hungary than in Honduras, the Phillipines or Sri Lanka. Almost a half of this gap was
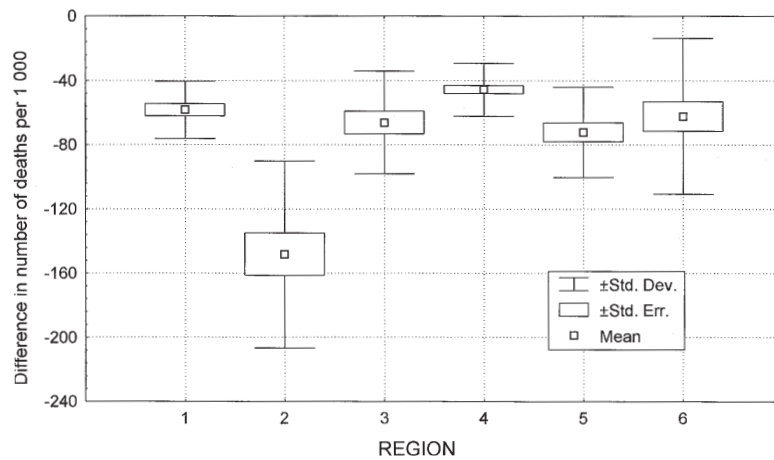
Fig. 2. The difference between females and males in probability of dying between ages 15 and 59 years is deepest in formerly socialistic economies in Europe. For explanation for other regions see legend for Figure 1.
Obr. 2. Rozdiel medzi ženami a mužmi v pravdepodobnosti úmrtia medzi vekom 15 a 59 rokov je najvýraznejší v bývalých európskych socialistických štátoch. Popis ostatných regiónov sa nachádza v legende pri obr.1.
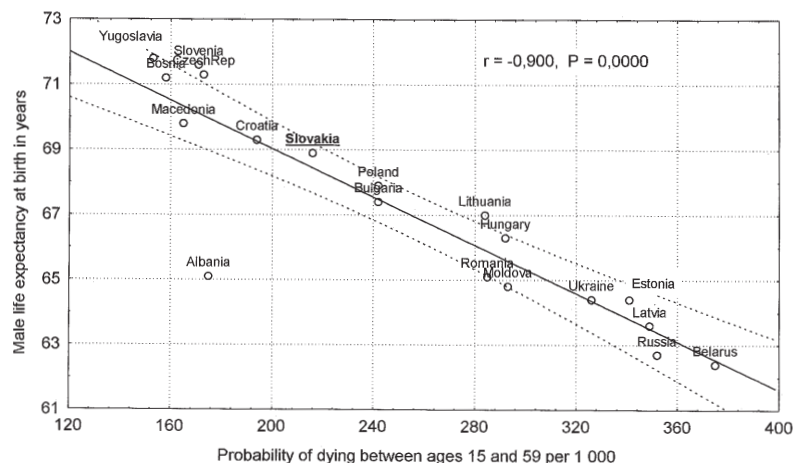

Fig. 3. The life expectancy of males in European postsocialist countries is determined by probability of dying between 15—59 years. The extreme position of Albania is caused by very high child mortality in this country.
Obr. 3. Strednú dĺžku života mužov v európskych postsocialistických krajinách určuje pravdepodobnosť úmrtia vo veku 15—59 rokov. Extrémne postavenie Albánska je spôsobené vysokou úmrtnosťou detí v tomto štáte.

due to cardiovascular mortality differentials in the age group 35-64 years (4). The risk of cardiovascular death between 15 and 59 years was significantly lower for females living in formerly socialistic economies. Figure 2 based on data from 1999 shows extremely high sex difference in probability of dying between ages 15 and 59 years in the formerly socialistic economies. This difference is significant in comparison with all other world regions (P=0,0000).

Figure 3 shows very close negative correlation between the probability of dying between ages 15 and 59 and male life expectancy in formerly socialistic economies. Albania is the only exception because of extremely high mortality under age 5 years.

The position of Slovakia is relatively good, much better than that of Hungary, Romania and of all states from the former USSR.

The WHO calculations of health system financing and estimates of overall health system performance belong to the most problematic part of the World Health Report 2000 (1). The aim of the authors was to create an index of performance and the ranking of countries based on the calculation how efficiently health systems translate expenditures into health as measured by DALE. Performance on the level of health was defined as the ratio between achieved levels of health and the levels of health achievable by the most efficient health system. Econometric methods have been used to estimate the maximum DALE for a given level of health expendi-
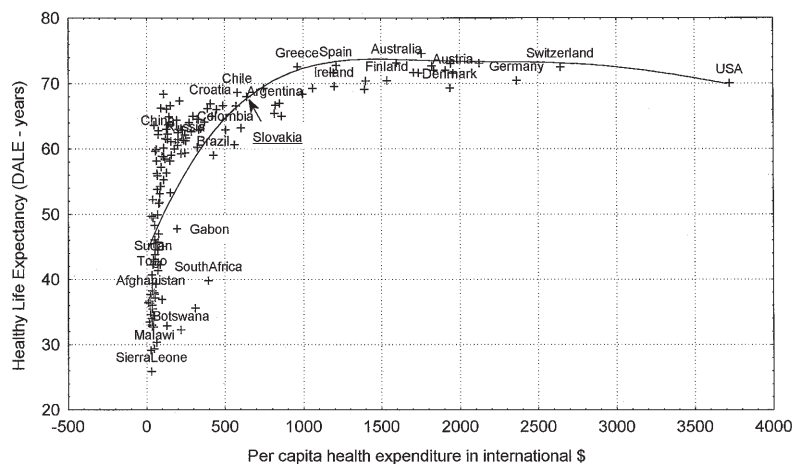
Fig. 4. The relation between health expenditure and healthy life expectancy (DALE) in WHO member states shows the complexity of this relation.
Obr. 4. Vzťah medzi výdavkami na zdravie (medzinárodné doláry na osobu za rok) a očakávanou dĺžkou zdravého života (DALE) je nelineárny a ukazuje zložitosť tejto problematiky.
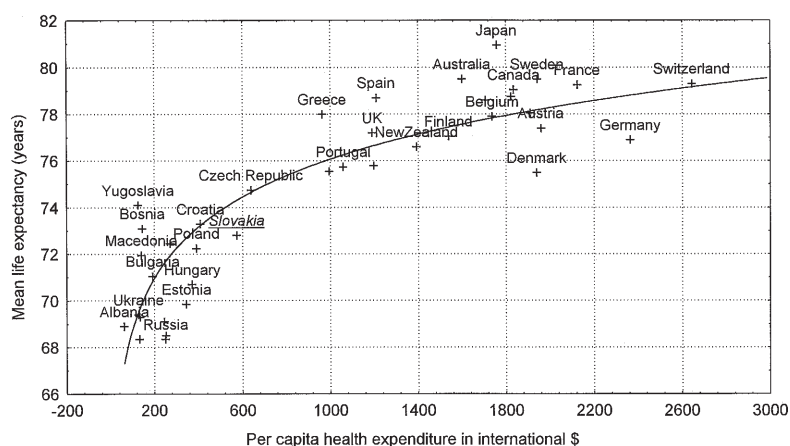

Fig. 5. The logarithmic relation between health expenditure and life expectancy in established market economies and formerly socialistic economies in Europe (USA was omitted because of very high health expenditure).
Obr. 5. Nelineárny logaritmický vzťah medzi výdavkami na zdravie (medzinárodné doláry na osobu za rok) a strednou dĺžkou života v štátoch s rozvinutou trhovou ekonomikou a v bývalých európskych socialistických štátoch (USA bolo vynechané vzhľadom na extrémne vysoké výdavky v zdravotníctve).

ture. The details of the complicated calculations are given in the WHO materials (5,6). Overall performance of health system was measured using a similar processing relating overall health system achievement to health system expenditure. According to these methods of evaluation the countries with high per capita health expenditure have very low rank. The performance on health level is in USA much lower than in Venezuela, Turkey, Algeria, Tunisia, Uruguay, Iran, Albania and in many other developing countries.

It is true that the population of countries spending less than 60 $ per person per year on health is unable to access health services from an adequately performing health system. On the other side, Figure 4 shows limits for increasing healthy life expectancy (DALE) with increasing health expenditure: after reaching a value of 1 000 to 1 500 $ per capita per year the DALE does not increase. Figure 5 is more clear: It includes demographically developed regions only (USA were omitted due to extremely high health expenditure) and shows logarithmic relation between health expenditure and mean life expectancy.

The message of WHO Director-General Dr Brundtland (1) according which "the health and well-being of people around the world depend critically on the performance of the health systems
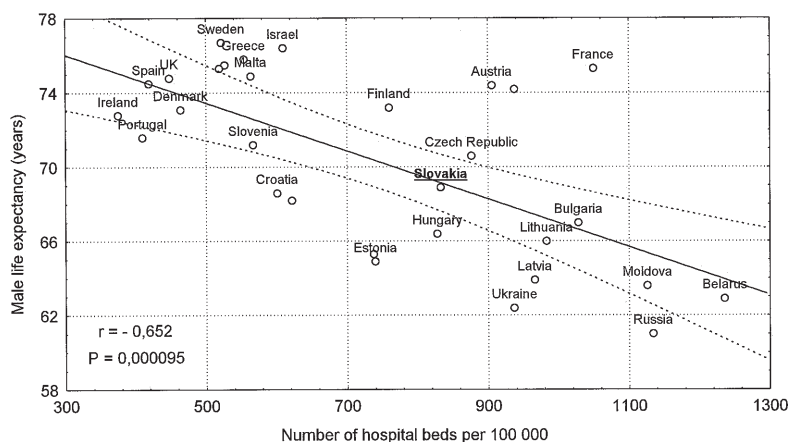
Fig. 6. Based on WHO data (3) shows low health system performance in former socialistic European countries: with increasing number of hospital beds the male life expectancy in Eatern Europe is decreasing.
Obr. 6. Vychádzajúci z údajov WHO (3), ukazuje nízku výkonnosť zdravotníctva v bývalých socialistických štátoch v Európe: so zvyšujúcim sa počtom nemocničných postelí na 100 000 obyvateľov klesá vo východnej Európe stredná dĺžka života.

that serve them" is true, but it could lead to omition that the health and well-being of people depend at least so critically on many other factors, such as life style, nutrition, pollution, etc. Thus, for instance, even excellent performance of health system would be without effect in Russia, if the prevalence of alcoholism in this country is permanently high (7,8).

The comparison of Albania and Slovakia is another example of the limited value of methods used in the calculation of health system performance. Per capita health expenditure in the year 1997 was in Albania 63, in Slovakia 574 $ (1). The number of hospital beds was in Slovakia three times higher and the number of physicians per 100 000 two times higher than in Albania (3). In spite of this the male and female life expectancy in Albania is by 2 years higher than in Slovakia because of 2 to 3 times higher premature cardiovascular and cancer mortality in comparison to Albania (3,9). Seemingly, the health system performance in Albania is much better than in Slovakia. The WHO rank of performance on level of health (1) is for Albania 64, for USA 72 and for Slovakia 88 (!).

Albania was for a long time isolated and now it is the poorest country in Europe. Infant mortality in Albania, despite its dramatic reduction in the last years, is one of the highest in Europe, but the adult mortality is one of the lowest. Protective effects of Mediterranean diet are the most plausible explanation. This diet has repeatedly been shown to provide protection against cardiovascular and other chronic diseases. Low intakes of saturated animal fats and high intakes of olive oil, cereals, red wine, fresh fruit and vegetables and fishes are most often proposed to account for the low cardiovascular and cancer mortality in the Mediterranean (10,11). Table 2 compares consumption of selected foods in Albania and Slovakia (FAO data) (12) . In Albania, there is very low consumption of animal fats, meat (especially pig meat), eggs, sugar and concentrated alcoholic beverages. On the other side, the consumption of cereals and vegetables is very high. The mortality is the lowest in the south-west Albania where most of the olive oil, fruits, and vegetables are produced and consumed (13). Therefore, the composition of diet and not the high health system performance contributed to the relatively good health of adult Albanian population.

This is not at all an apology of the quality of health system performance in postcommunist Europe. On the contrary, the health system performance in this part of Europe is not good. Health system performance depends on cost-benefit ratio. The funny Figure 6 shows that with increasing number of hospital beds the

Tab. 2. Comparison of average consumption of selected foods (kg per person per year) in Albania and Slovakia. Average of 1997—1998, FAO data (12).
Tab. 2. Porovnanie priemernej spotreby vybraných potravín (kg na osobu za rok) v Albánsku a na Slovensku. Priemery z rokov 1997—1998, FAO Databáza (12).

Food Potravina	Albania	Slovakia
meat mäso	24.1	75.9
pig meat bravčové mäso	4.1	48.5
eggs vajíčka	7.5	17.1
animal fats živočíšne tuky	2.1	13.9
sugar cukor	20.6	34.7
spirits destiláty	1.0	9.3
vegetables and fruits zelenina a ovocie	234.3	158.4
cereals obilniny	198.0	113.9

male life expectancy in Europe is decreasing. The countries from Eastern Europe have highest number of hospital beds and simultaneously lowest life expectancy of males. It is true that many countries Slovakia inclusive are under-utilizing the resources that are availble for them. This leads to large numbers of preventable deaths and disabilities, caused in Slovakia by very high premature mortality from cardiovascular diseases and cancer (14,15). The second part of WHO Director-General message is very important for Slovak Republic goverments: "It is essential for decision-makers to understand the underlying reasons so that system performance, and hence the health of population, can be improved" (1).

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PREDSTAVUJEME NOVÉ KNIHY

Holomá ová A., Brucknerová I.: Srdcovocievna sústava. Anatomické názvy (Latinsko-anglicko-slovenský slovník). 1. slov. vydanie. Bratislava, Elán 2000, 70 s. *ISBN 80-85331-26-8*

Pri predstavení tejto publikácie sa musíme vrátiť do histórie. Anatomická terminológia je dokladom dejín medicíny. Na Slovensku vzniklo prvé Slovenské anatomické názvoslovie r. 1935 ako dielo profesora Ladzianskeho, ktorý pôsobil na Anatomickom ústave Lekárskej fakulty UK v Bratislave. Jeho dielo je po stránke odbornej aj jazykovej veľkým prelomom a veľkou výzvou. Po zmenách názvoslovia r. 1955 (tzv. Parížske anatomické názvoslovie) stratila platnosť Bazilejská i Jenská anatomická terminológia. V tomto zmysle upravené prepracované vydanie Ladzianskeho Nomina Anatomica profesorom Horeckým a spol. vyšlo 1962. V súčasnosti však na Slovensku nie je anatomické názvoslovie, ktoré by zodpovedalo platnej medzinárodnej terminológii.

Je priam symbolické, že výzvu, ktorú predstavuje tradícia Anatomického ústavu LFUK v Bratislave, zdvihla práve docentka dr. A. Holomáňová, CSc., ktorá spolu s dr. Brucknerovou urobila prvý krok a spracovala slovník anatomických názvov Srdcovocievnej sústavy ako 1. časť nového Anatomického názvoslovia na Slovensku. Slovník je rozdelený na dve časti – v prvej sú anatomické názvy Srdcovocievnej sústavy usporiadané podľa tematických okruhov (všeobecné názvy, srdce a jeho časti, tepny a žily) a v druhej časti je register latinských názvov. Termíny sú usporiadané v troch stĺllpcoch – latinský názov, anglický a slovenský ekvivalent. Autorky urobili veľký kus práce, využili svoju profesionalitu a dokázali vniesť do slovenského anatomického názvoslovia prvky moderného slovenského jazyka, využili výrazové a obsahové možnosti na slovenské vyjadrenie latinského základu. Slovník anatomických názvov Srdcovocievnej sústavy obsahuje takmer 1200 názvov v latinskom jazyku a im zodpovedajúcim ekvivalentom v anglickom a slovenskom jazyku. Register latinských názvov dovoľuje rýchlu a presnú orientáciu v prvej časti slovníka.

Nielen po obsahovej, ale aj po formálnej stránke treba autorkám pogratulovať ku krásnej publikácii. Chceme vysloviť presvedčenie, že čoskoro sa objavia aj ďalšie časti slovníka, ktoré spoločne završia tvorbu nového slovenského anatomického názvoslovia.

Knihu odporúčame do pozornosti všetkým lekárom, nielen morfológom a kardiológom, pretože základom odbornej komunikácie je spoločný jazyk a jednotná terminológia. Z rovnakého dôvodu musí byť kniha základnou študijnou literatúrou pre študentov medicíny.

M. Bernadič