FALL OF THE IRON CURTAIN: MALE LIFE EXPECTANCY IN SLOVAKIA, IN THE CZECH REPUBLIC AND IN EUROPE

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SUMMARY

Year 1989, the fall of communism, represents a dramatic watershed. Changes and reforms reflected also upon the quality of health care and the health of populations living on eastern side of the divide. Until then, Eastern Europe had free socialized medicine, albeit troubled by lack of up-to-date medications and absence of modern diagnostic equipment. Noting the admirable progress in health in some regions of the former Soviet empire during its transformation provides invaluable sociological lesson. Furthermore, focusing on health trends in two Central European countries, the Czech republic (CZ) and Slovakia (SK), brings about another quality to such evaluation. Dramatic improvement in the life expectancy (LE) is represented mainly in the decrease of cardiovascular mortality, more in the Czech Republic than in Slovakia. Favorable trend of male LE in the Czech Republic exceeded several established West European countries, while in Russia, Belarus and Ukraine the life expectancy actually deteriorated. When life expectancy in Slovakia is compared with the Czech Republic, its poorer outcome results from a higher cardiovascular mortality, as well as from liver, digestive and respiratory disorders. Root causes of this difference are possibly in a marked difference in funding of health care between SK and CZ, higher consumption of alcohol and cigarettes, as well as in a sizeable disadvantaged Roma minority in Slovakia.

Key words: life expectancy, change after 1989, cardiovascular mortality, Europe, Czech and Slovak republics, Roma minority

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INTRODUCTION

The end of communist totality resulted in unexpected changes in life expectancy at birth (LE) in Central and Eastern Europe (1). The World Health Organization (WHO) considers these changing trends in European mortality to be one of the ten most remarkable health developments, next to improvement in AIDS, malaria and smoking. However, WHO Annual report for 2008 points out adverse trends in LE of East European males without specifying respective regions.

The aim of this review is to identify trends of male LE in various European countries, paying particular attention to Czech Republic (CZ) and Slovakia (SK). The progress of economy, science and of health care in Western Europe resulted in a steady increase of LE in Switzerland, Italy and Austria (Fig. 1). Very similar increase of male (and also of female) LE was observed in all countries of European Union (EU). On the other side, in communist countries there was evident stagnation of LE between the years 1970–1990. Data in Fig. 1 for Hungary, Poland and the Czech Republic are similar in all Eastern Europe countries with exception of Soviet Union. Eastern Europe had free socialized medicine which was troubled by lack of up-to-date medications and absence of modern diagnostic equipment. After the fall of iron curtain the situation has changed and LE begin to rise (arrow in Fig. 1). Health trends associated with the transformation of the society to the free market system may certainly be of interest also to the non-Central European countries. Data for this review were obtained from WHO reports (2, 3), from SK and CZ epidemiological studies (4, 5, 6) and from the world-wide databases accessible on the internet (7, 8).

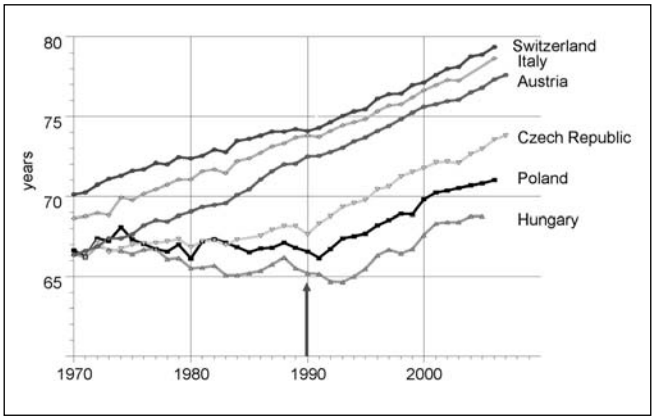

Fig. 1. *Male life expectancy at birth in some western and central Europe countries. WHO data (2).*

TRENDS OF LIFE EXPECTANCY AFTER THE FALL OF IRON CURTAIN

Table 1 illustrates the changes of male LE in 1990–2005. These data sources are considered reliable. Surprisingly, CZ achieved the highest increase in LE in the whole Europe. Next to CZ, the improvement in LE was reported from Ireland, a country that was transformed from economic inferiority thanks to inclusion into the European Union. In CZ and Ireland the LE increased in that period by more than five years. In this comparable fifteen years period the LE in countries having a well established economy and traditional health system increased by four years. The increase in LE in SK, Hungary and in the two economically successful Baltic republics was 2 to 2.5 years. The data from the other parts of the former Soviet space are discouraging. Despite attempts to implement new reforms, the male LE in Russia, Belarus, Ukraine and Lithuania actually decreased. Different trends in LE were caused by changes in premature cardiovascular mortality of males in active age (Fig. 2). The incredible increase of cardiovascular mortality in Russia caused great decrease of male LE (65 years in 1987 to 59 years in 1995).

It would be interesting to follow these trends both in Western and Eastern Europe during the contemporary financial and economical crisis.

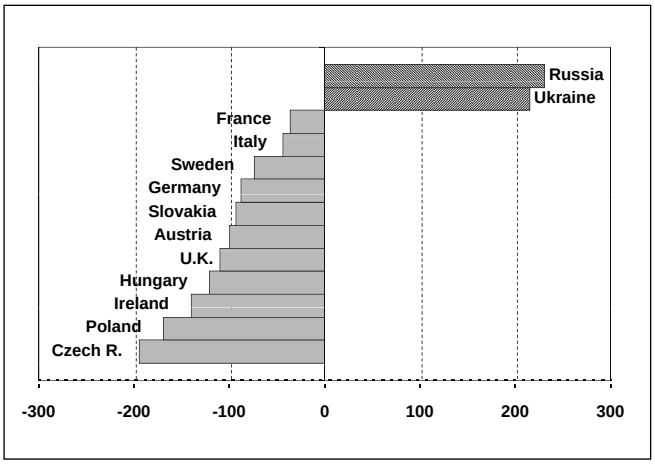

Fig. 2. *Change of male cardiovascular mortality (SDR/100,000) between years 1990–2005/6 in Europe in age group 25–64 years. WHO data (3).*

DIFFERENT TRENDS IN LIFE EXPECTANCY IN SLOVAK AND CZECH REPUBLICS

The recent data indicate that a male newborn in CZ has the probability of survival (LE) three years better than has a similar baby born in SK. These differences are less prominent for female neonates, the significance of this difference is uncertain and this review will concentrate only on male population. In the former Czechoslovakia there was a prominent west to east gradient represented by the decline in LE. The difference between the area of Prague versus Košice was in excess of five years. Fig. 3 indicates a marked difference between SK and CZ in the improvement of LE since 1990. Different trends in LE of males in SK and CZ can be explained by different age-mortality structure in these two countries. Frequent explanation for this difference in LE is a lower infant mortality in CZ compared to SK. CZ belongs to European countries with a very low infant mortality (3.40 deaths/1,000 live births). Compared to CZ, SK has somewhat higher infant mortality. Infant mortality improved almost in parallel both in SK and CZ after 1990. While slightly higher infant mortality in SK only partly contributes to the lower LE compared to CZ, there is a marked difference between these two countries in the mortality of children and adolescent males (age 1–19 years). Interestingly, improvement in the male mortality at the middle age of 30–44 and 45–59, is of the same magnitude in SK and CZ. A marked difference between SK and CZ in male mortality occurs again in older males, 60–74 years of age (Fig. 4).

Table 1. *Changes of male life expectancy at birth (LE) in Europe between years 1990–2005 WHO data (2).*

Rank	Country	LE 1990	LE 2005	Δ Difference	Country characterization
1	Czech Rep.	67.63	73.00	+ 5.37	former totalitarian country, successful transformation
2	Ireland	72.05	77.32	+ 5.27	dramatic economic growth
3	Switzerland	74.07	78.86	+ 4.79	democratic countries with stable market economy, steady economic growth, adequate funding for health care
4	Finland	71.02	75.81	+ 4.79	
5	Germany	72.08	76.65	+ 4.57	
6	Norway	73.49	77.96	+ 4.47	
7	Austria	72.47	76.81	+ 4.34	
8	England	72.98	77.44	+ 4.11	
9	Hungary	65.21	68.75	+ 3.54	former totalitarian countries, problems with economic transformation
10	Slovakia	66.78	70.32	+ 3.54	
11	Estonia	64.68	67.31	+ 2.63	
12	Latvia	64.18	65.44	+ 1.14	
13	Lithuania	66.52	65.37	- 1.15	former countries of USSR, turbulent political and economical development, alcoholism
14	Belarus	66.26	62.92	- 3.34	
15	Ukraine	65.67	62.34	- 4.15	
16	Russia	63.79	59.00	- 4.79	

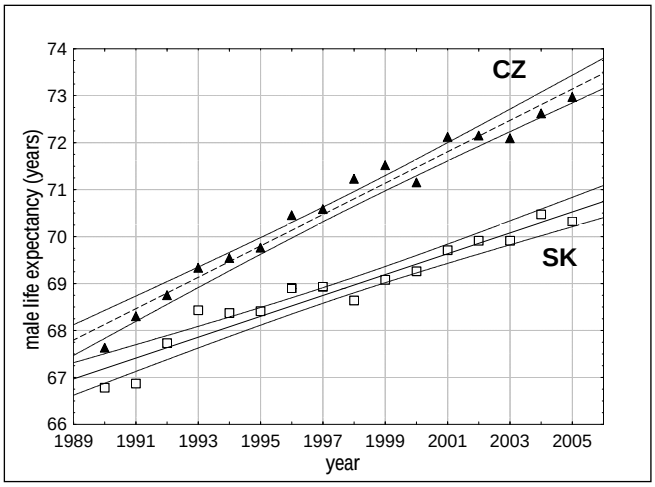

Fig. 3. *Different trends of male life expectancy in Slovakia and Czech Republic after 1990. WHO data (2).*

Significance of slope difference P<0.01.

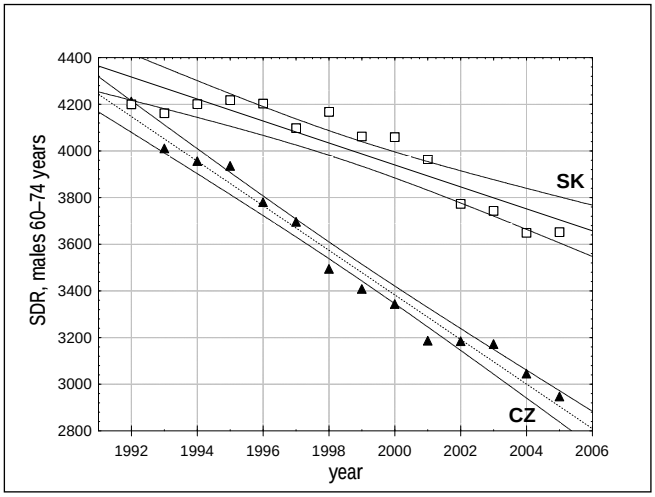

Fig. 4. *Different decline of total mortality (SDR/100,000) of males in the age group 60–74 years in Slovak and Czech Republics after 1992. WHO data (3).*

Significance of slope difference P<0.001.

SDR = Standardized Death Rate

Ethnic composition of populations in SK and CZ markedly affects the outcome of public health. CZ became ethnically homogenous after the expulsion of Germans at the end of World War II. The majority of the 10.4 million inhabitants of the CZ are ethnically and linguistically Czech or Slovaks (96%). Other ethnic groups (cca 4%) include Germans, Roma and Poles. In contrast, Slovakia remains ethnically heterogenous. Slovaks, together with a Czech minority represent slightly more than 80%, Hungarians 10%, Roma and others the rest. It should be noted that the Roma ethnicity is not clearly defined: during the census many Romas reported being part of the ethnic majority. Statistics estimate in SK the presence of 6–8% Roma and about 1% of Ruthenians and Ukrainians. Thus, in contrast to the ethnically homogenous CZ, there is a prominent SK Roma minority which health, being poorly controlled is worse than that of the ethnic majority. Health status of other SK minorities (Hungarian, Ruthenian, Ukrainian) does not differ that much from Slovaks but based on health reports from the countries of their origin, these minorities may also mildly moderate the general health profile in SK (11).

Roma minority has a prominent effect on the statistical average. In Roma males the LE is estimated at 62 years, about eight years less than the SK national average (9) which significantly lowers the national average of LE in Slovakia. Other health differences between SK and CZ may also be influenced by the health of Roma (10–12). Infant mortality in Roma settlements has been repeatedly disproportionately high. This contributes to persistently higher infant mortality in SK compared to CZ. In addition, the conduct of Roma children and teens in Roma settlements is markedly risky: catastrophic environmental hygiene, high addiction to smoking, alcohol and drugs, including toluene sniffing. Alcohol and toluene toxicity has been reported, in addition to Roma adults, also in their children. These factors clearly contribute to the unfavorable mortality of SK children and teenagers. The age structure of the Roma population is remarkable for a rapid decrease of males in the older age groups, reflecting high mortality after age 60. This is also a factor contributing to a marked difference between SK and CZ in male mortality at the age interval 60–74 years (Fig. 4).

CAUSE-DEATH RATES DIFFERENCES BETWEEN SK AND CZ

Figure 5 illustrates the marked difference between SK and CZ in factors contributing to male premature mortality (age group 0–64 years). Most prominent in this difference is mortality related to ischemic heart disease and to general cardiovascular causes in SK. In SK the mortality related to chronic liver disease, liver cirrhosis, digestive and respiratory disorders is higher compared with CZ. Also, there is higher mortality in SK related to infection, especially tuberculosis, to trauma and homicide. Multiple factors influence the health of a population, among which is the environment, economy, nutrition, life style and accessibility of health care. Detailed analysis of these factors is complex and beyond the scope of this review. The Food and Agricultural Organization (FAO) (13) indicated that the nutritional structure in SK compared

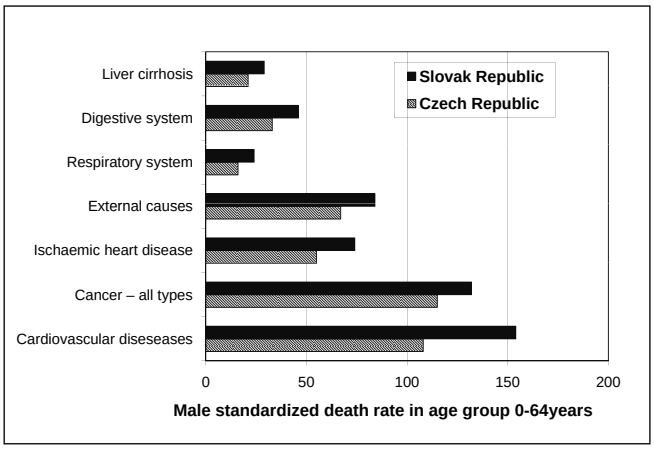

Fig. 5. *Cause-specific premature mortality of males in age group 0–64 years (SDR/100,000) in Slovak and Czech Republics in 2005. WHO data (2).*

to CZ features higher consumption of animal fat and eggs with lesser intake of milk, plant fat and imported fruit. Because of this, the provision of protective antioxidants seems higher in CZ than in SK. Possible explanation is a better economic standard in CZ. Population with higher intake of fresh and higher biological quality of nutrients may counter the imbalance between the intake of antioxidants and a high consumption of alcohol and tobacco. This may potentially inhibit the development and progression of cardiovascular and respiratory disorders. Domestic illegal production and smuggling of alcohol from Ukraine contribute to its higher consumption in SK. Frequent and high consumption of alcohol represents an important risk for SK population. There is much higher smoking prevalence in SK Roma minority. The sale of cigarettes is higher in SK, with statistics being inaccurate due to cigarette smuggling.

Social fund is an essential determinant for the quality of life and death. Sociologists claim that the social fund includes a social gradient, nutrition, working conditions, unemployment, stress, social support, social isolation and absence of addiction to alcohol, nicotine and illegal drugs. According to this concept, positive influence is based on social solidarity among various multiethnic groups, social isolation has a negative effect. It appears that the social fund is higher in CZ compared to SK also because of better general education and an ethnic homogeneity. The economy in CZ, for historical reason, appears more favorable but the fast progress in SK promises that economic differences will be negligible in a foreseeable future. Gross domestic product per capita in dollars in 2007, reported by the CIA (8) was 20,300 purchasing power parity (PPP) in SK and 24,200 PPP in CZ. Undoubtedly, funding of health care has direct effect on the quality of health of the population. There exists a marked difference in funding of health care between SK and CZ, this was underestimated by past SK governments. Better quality of health care in CZ may be the result of higher funding, better quality of health education as well as higher salaries of physicians and nurses.

CONCLUSIONS

The breakdown of the totalitarian system in Central Europe in 1989 was accompanied by an increased hope for a longer and healthier life. The most important factor in improved LE was a remarkable drop in cardiovascular mortality, more prominent in CZ than in SK. Of this, the unexpected improvement in LE of males after 1990 in CZ and also to a lesser extent in SK, is explained by sociologists and social psychologists as the consequence of relief from the psychological stress of totality and the perspective of an improved living standard. Nutritionists outline their arguments. Better nutrition with replacement of saturated with unsaturated fatty acids and better supply of imported fruit resulting in higher intake of vitamins A and E were instrumental. At the same time these improvements remedied the seasonal deficiency of vitamin C and folic acid, increasing at the same time the intake of dietary fiber. All this reduced the harmful biological effect of the free radicals on the cardiovascular system. Undoubtedly, other factors of a shorter onset included improvements in medical diagnosis, availability of modern medications and new therapeutic procedures. Preventive measures for the control of blood pressure and of serum lipids certainly had their significant impact. Also, stricter criteria for reduction of environmental risks have been enforced.

More favorable improvement in health care in CZ after 1990 compared to SK may be attributed to the drop in the mortality of children and juveniles but also to an improved LE in older males. Statistically, the main inhibiting factor for improvement in LE in SK is cardiovascular mortality. Other factors to consider is lower economic performance and lower funding of health care in SK. In order to attain highest quality of health care, the SK society has to assign adequate funding for health services, including better health education. The proportionally important Roma minority in SK has an important negative influence on the overall health care outcome. Impending social problems of this growing but still marginalized Roma population necessitate careful attention.

The orientation of the medicine to the prevention of chronic diseases (especially of cardiovascular and oncologic diseases) and a change of the attitude of the population to its own health presents the way to the rapid improvement of the health status of Slovak population (14).

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