

CHANGES IN THE HEALTH SITUATION IN THE CZECH REPUBLIC, ESTONIA AND SLOVENIA DURING THE TRANSITION PERIOD

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Abstract

The paper analyses the health situation in three of the most developed countries created on the ruins of Czechoslovakia, Yugoslavia and the Soviet Union, namely: the Czech Republic, Slovenia and Estonia. The scope of the analysis comprises the period 1990–2013. The analysis uses five variables: the crude death rate per 1,000 population; estimated infant deaths per 1,000 live births; the difference in life expectancy at birth between females and males (in years); the incidence of tuberculosis per 100,000 population; the incidence of syphilis and gonorrhoea infections per 100,000 population. Typical methods of analysis have been applied: the arithmetic mean, the relative standard deviation, the Pearson product-moment correlation coefficient, the autoregressive model (for the coefficient of determination above 0.80). Similarities in the level and changes in the health situation were found between the Czech Republic and Slovenia, and a partly different course and level in the case of Estonia (this applies in particular to the crude death rate, the incidence of tuberculosis, the incidence of syphilis and gonorrhoea infections). All three analysed countries were very successful in their systemic transition, but Estonia had the hardest situation, which was reflected in the fact that initially some parameters defining the inhabitants' health situation had deteriorated.

Key words: Central Europe, the Czech Republic, Estonia, Slovenia, health situation, autoregressive model

INTRODUCTION

The objective of the study is to evaluate changes in the health situation in the most developed European post-Communist countries created on the ruins of larger states, i.e. Czechoslovakia, Yugoslavia and the Soviet Union. On the one hand, the collapse of the system of Communist states brought freedom and gave their citizens a chance for a better life. But, on the other hand, it also brought some dangers. One of them was the negative consequences of the breakup of larger organisms. In addition, in the case of newly created countries, the simultaneous necessity to create statehood with all its attributes was an additional factor impeding reforms (Lorber 2010).

First of all, changes in the population's situation (including health) in European post-Communist countries have been affected by the reforms that have been carried out (economic, political and social) and also by cultural determinants. Yet, on the other hand, the consequences of the dissolution of states (direct ones such as warfare, and indirect ones such as cutting economic links) have also, in principle, adversely influenced the health situation of their people.

In determining the most developed countries arising from the ruins of Czechoslovakia, both countries from which it was formed were considered. In the case of Yugoslavia, these were almost all the

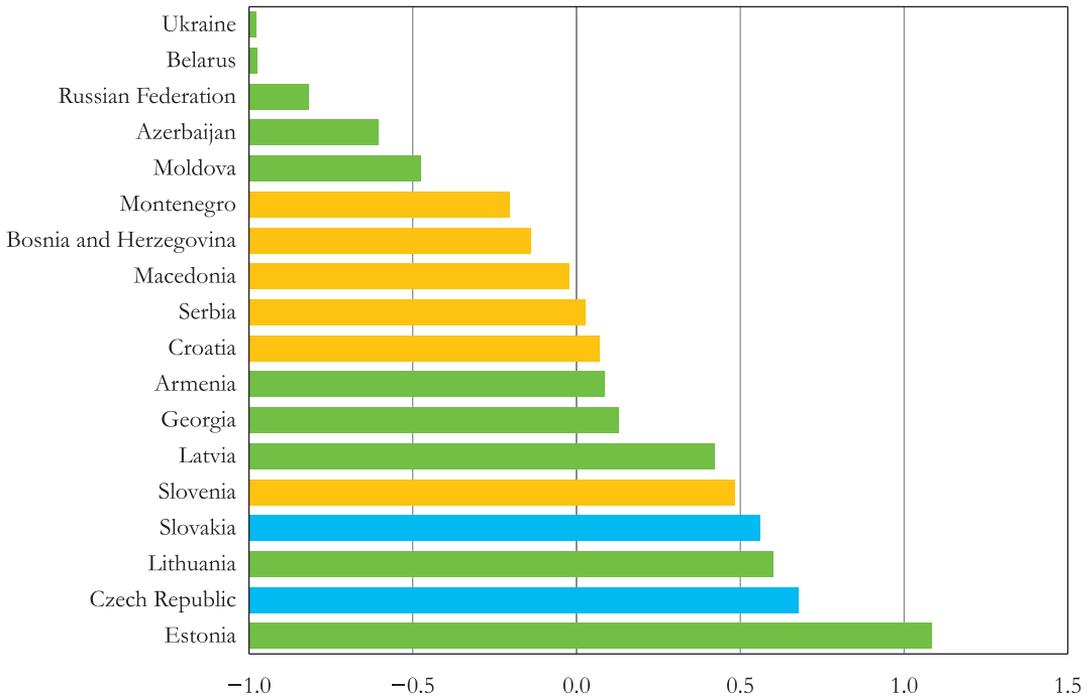


Figure 1 The synthetic evaluation of the level of development of European post-Communist countries arising from the dissolution of Czechoslovakia, Yugoslavia (without Kosovo) and the USSR (without Asian republics), as of 2014. Source: own elaboration based on RWB 2015; The Heritage Foundation 2015; The Legatum Institute 2015; The Social Progress Imperative 2015; Transparency International 2015; World Bank Open Data 2015.

countries existing in 2013, apart from Kosovo (it was excluded from the analysis due to incomplete data). For the USSR, the former republics of Central Asia were excluded from the analysis. In total, 18 countries were considered.

Countries with the most favourable situation were defined on the basis of the 6 variables, to which Perkal’s weighted synthetic index was applied (Parysek and Wojtasiewicz 1979). All variables were standardized, and destimulants were replaced by stimulants. Data for the variables were used from 2014, with the exception of GNI per capita and PPP (current international \$), for which, data from 2013 were used. Below are the variables taken for analysis (in parentheses the % of the impact of the variable for the final value of the index is given):

- Legatum Prosperity Index (0.20%), (The Legatum Institute 2015);

- Social Progress Index (0.20%), (The Social Progress Imperative 2015);
- Index of Economic Freedom (0.15%), (The Heritage Foundation 2015);
- World Press Freedom Index (0.15%), (RWB 2015);
- Corruption Perceptions Index (0.15%), (Transparency International 2015);
- GNI per capita, PPP (current international \$) (0.15%) (World Bank Open Data 2015).

The results of the analysis are shown in Fig. 1. As can be seen, Estonia (from the European part of the former USSR), the Czech Republic (from former Czechoslovakia) and Slovenia (from former Yugoslavia) were taken for further analysis. The timeframe of the study covers the period 1990–2013. It must be remembered that, due to the availability of data, in some cases the period of analysis was shortened.

STATISTICAL DATA AND THE APPLIED METHODS OF ANALYSIS

While selecting variables for the analysis of differentiation in the health situation in the surveyed countries, both the relevance of these variables to each country's description and the availability and the quality of statistical data were taken into consideration. As a result, five variables were used in the analysis:

1. Crude death rate (CDR) per 1,000 population.
2. Estimated¹ infant deaths per 1,000 live births. The infant mortality rate is the number of infants dying before reaching one year of age, per 1,000 live births in a given year. Estimates developed by the UN Inter-agency Group for Child Mortality Estimation (UNICEF, WHO, World Bank, UN DESA Population Division).
3. Difference in life expectancy at birth between females and males (in years)².
4. Incidence of tuberculosis per 100,000 population.
5. Incidence of syphilis and gonorrhoea infections per 100,000 population.

The death rate is a comprehensive index showing the health situation of the population. There are two indices describing mortality. The first is the crude death rate (CDR) defining the number of registered deaths, e.g. per 1,000 inhabitants. The second is the age-standardized death rate (SDR) describing what the level of mortality would be if the age structure of the population was a model one (Kędelski 1990; Hinde 2009). CDR strongly depends on the age structure of the population; therefore, SDR is more often applied in international comparisons. In this study, CDR was chosen, since the emphasis was on defining the actual health situation of the population of post-Communist countries.

¹ Based on estimated data, because the data coming from certain countries are understated (for various reasons).

² The criteria used in such research analysis of the life expectancy at birth total (in years) was abandoned, since its level and changeability are largely related to the CDR (for example, for the years 1990–2013 the PCC between life expectancy at birth, total (years) and CDR per 1,000 people in the Czech Republic amounted to 0.91).

Infant mortality is a very sensitive indicator of a society's health situation, because it depends on both parents' pro-health behaviours (especially the mother during pregnancy) and on the living conditions and the quality of the medical care of pregnant women, and then of infants (Masuy-Stroobat 2006).

For years most countries of Eastern Europe have had a much higher premature death rate among men compared to women (Watson 1995). Biological determinants alone make the average life expectancy of a man shorter than that of a woman by one to two years (Ram 1993; Luty 2003; Abdulraheem et al. 2011). Larger differences are already conditioned by non-biological factors, especially men's anti-health behaviours (such as alcoholism or nicotinitism), and also the level of safety at work, etc. (Levchuk 2009; Carlton and Hoffmann 2011).

Tuberculosis (ICD-10³: A15–A19) can be considered to be an infectious disease associated with the level of wealth of a society, in particular housing and sanitary conditions, and nutrition. Also the advancement level of preventive screening has an impact. The progress of civilization and an improvement in living conditions has meant that for a long time tuberculosis seemed to be marginal in economically developed countries. But warfare or a crisis resulting in pauperisation of the society, cutting welfare and preventive programmes, etc. has resulted in a "rebirth" of the disease⁴. A similar impact is exerted by the HIV/AIDS epidemic (difficulty in treating tuberculosis in patients with HIV) and by the emergence of drug-resistant tuberculosis strains (Szczuka 2000; Sonnenberg et al. 2005; Zielonka 2014).

Despite the progress in treatment and raising the population's awareness, sexually transmitted diseases (STD) and HIV continue to be a major health

³ ICD-10 is the 10th revision of the International Statistical Classification of Diseases and Related Health Problems, ICD-10, Volume I. 2009: World Health Organization, Geneva.

⁴ A good example here would be an increase in the number of tuberculosis cases in Bosnia and Herzegovina in the aftermath of the war from slightly above zero in 1991 to 52.5 cases per 100,000 people 5 years later (Puvacic et al. 1997).

problem in Europe, especially in its eastern part (Adler and Meheust 2000). STDs can be considered as diseases associated, on the one hand, with the psychological condition of societies (especially in the aspect of morality) and, on the other hand, with the level of awareness of the population of the risks and the level of development of prevention programmes. In fact sexually transmitted diseases, especially syphilis, significantly fluctuate under the influence of any kind of violent change. This is very clearly seen, for example, in the case of the situation in Russia after 1990 (Axmann 1998; Zhuravleva 2001). This analysis was based on two diseases: syphilis (ICD-10: A50-A53) and gonorrhoea (ICD-10: A54).

Data taken for the analysis came from two main sources. In the case of the first four variables, World Bank Open Data 2015 was the source. In the case of the last variable, European health for all database (HFA-DB) by WHO Regional Office for Europe was the data source. Deficiencies in the data were first compensated for on the basis of statistical data coming from particular countries. If this failed, then in the case of small gaps in the data, interpolation was made.

The study applied typical methods of analysis:

- To calculate the average level of intensity during the analysed period: arithmetic mean.
- To calculate the overall variability of the analysed processes in the countries during the period: relative standard deviation (RSD).
- To calculate the similarity of changes in the analysed processes in the countries during the period: Pearson product-moment correlation coefficient (PCC).
- To determine regularities in changes in the analysed processes in the countries during the period: autoregressive model (the following functions were taken into consideration: linear function, power function, logarithmic function, exponential function, quadratic function; from them a regression function with the highest value of the coefficient of determination was selected; if for all the tested function R^2 was below 0.80, the analysis was abandoned).

RESULTS

In this section the average level and the nature of changes in the processes described above by means of the five variables have been analysed in detail.

The mean level of the crude death rate per 1,000 people during the period of 1990–2013 was the highest in Estonia⁵ (13.0) and clearly lower in the Czech Republic (10.8) and Slovenia (9.4). Also the situation was the least stable in Estonia (RSD = 13.0%), better in the Czech Republic (5.9%), and the best in Slovenia (2.5%).

Analysing changes in the level of the crude death rate per 1,000 people for particular years (Fig. 2), it becomes apparent that a clear downward trend can only be seen in the Czech Republic, which was initially greater but declined in the subsequent years. In the other two countries there were distinct fluctuations; it is symptomatic that in the initial period there was a clear deterioration of the situation (in Slovenia increased mortality occurred during 1990–1993, while in Estonia, not only was the death rate even greater, but it also lasted a year longer). Focusing on the similarity of changes in the death rate level, it can be concluded that in the initial period it was similar in Estonia and Slovenia (PCC = 0.60) and in the second period it was closer in the Czech Republic and Slovenia (PCC = 0.62). However, no clear similarities in changes can be noted between Estonia and the Czech Republic (PCC = 0.36).

Therefore, one can venture to propose the hypothesis that Estonia and Slovenia suffered the greater demographic hardships from the breakdown of the larger countries which they were previously part of. This was also significantly influenced by the drama of the process of gaining independence by those states (the initial direct interference of Moscow and Belgrade). Hence the changes in the CDR level in these two countries were initially similar. However,

⁵ In the period before the collapse of the USSR, the situation in this respect was worse in Estonia, Latvia and Lithuania than in the USSR as a whole; e.g., for the years 1958–1959 CDR in Estonia amounted to 10.9 per 1,000 population, in Latvia 10.4, in Lithuania 8.6, while in the USSR as a whole it was 7.4 (Krúmiņš and Zvidriņš 1992).

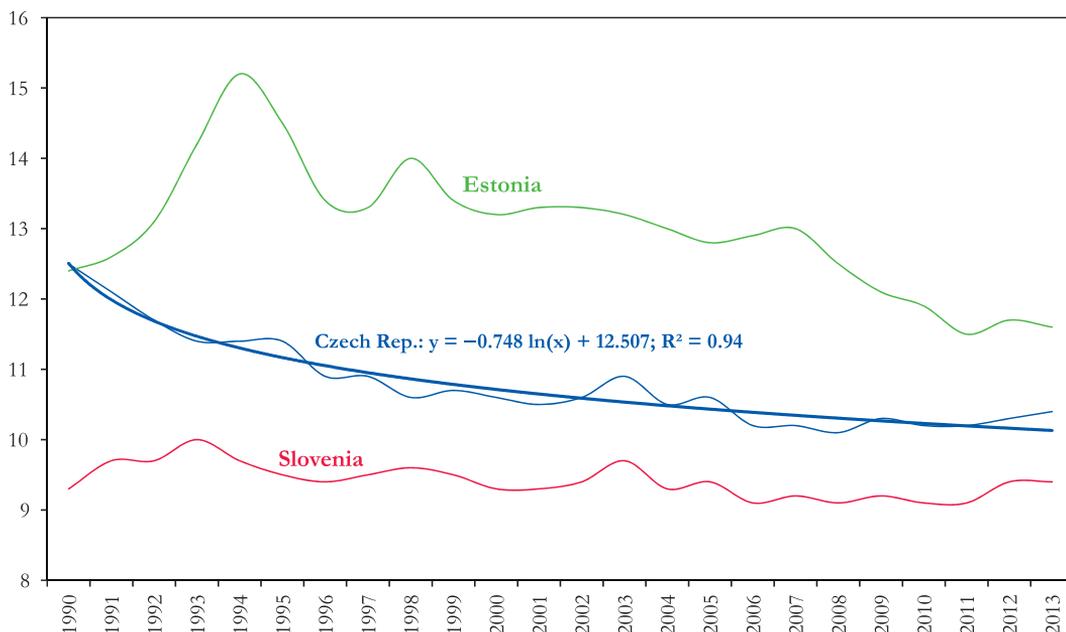


Figure 2 Changes in the CDR per 1,000 people in 1990–2013.
Source: own elaboration based on data from the World Bank Open Data 2015.

in the case of the Czech Republic the process of disintegration of the larger state it was part of occurred later and was not as dramatic⁶. On the other hand, the similarity in the CDR level between the Czech Republic and Slovenia in the second half of the analysed period results from similarities in the cultural conditions in these countries as well as in their social, economic and political situations. The relatively high mean level of the analysed mortality in Estonia in comparison to the Czech Republic, and especially to Slovenia, requires a separate explanation. To a large extent this is due to the very high health costs of the transformation, especially in the initial period (Kaasik et al. 1998) and a worse situation among non-Estonians⁷, who in 2014 constituted 30.3%⁸ of the country's population.

⁶ Blažek and Dzúrová (2000), Dzúrová (2000) draw attention to the initially positive impact of „peace“ during the transformation on reducing mortality in the Czech Republic.

⁷ Data on mortality in Estonia broken down by nationality have not been found, but according to figures published in the (Estonian) Health Statistics and Health Research Database, the average life expectancy of a person born between 2006–2013 was 76.1 years for Estonians, and 73.4 years for non-Estonians.

⁸ As of 1 January 2014, Estonians constituted 69.1% of the citizens, Russians 25.3%, other nationalities 5.0% (Statistics Estonia 2015).

In the period of 1990–2013 the mean level of the estimated infant mortality rate per 1,000 live births again achieved the highest value in Estonia (8.6), while in the Czech Republic (6.3) and Slovenia (4.7) it was definitely lower. The situation was quite stable – relatively the largest variability in the situation was reported in Estonia (RSD = 4.5%), a lesser one in the Czech Republic (3.1%) and in Slovenia (1.9%).

Analysing the changes in the level of the estimated infant mortality rate per 1,000 live births in subsequent years (Fig. 3), we see a very clear downward trend, which has weakened with time. Unsurprisingly, then, the changes in all three countries are closely correlated⁹. In turn, looking at the pace of the changes, one can see a very sharp improvement in the situation in Estonia¹⁰ and a much weaker one in the Czech Republic. Hence, if at the beginning of the analysed period the situation in Estonia was worse than in the Czech Republic, in 2011 it was the same and it became even better in the following years.

⁹ PCC value in the range of 0.98–0.99.

¹⁰ From a staggering 16.5 deaths per 1,000 live births in 1990 to only 2.7 in 2013 (World Bank Open Data 2015).

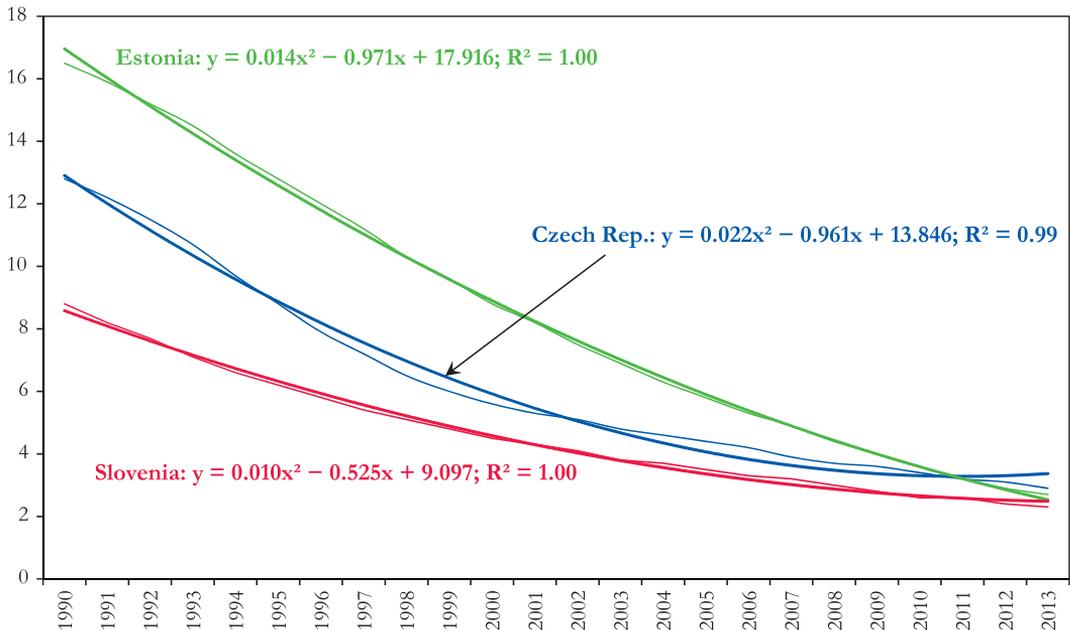


Figure 3 Changes in the estimated infant deaths per 1,000 live births in 1990–2013.

Source: own elaboration based on data from the World Bank Open Data 2015.

Therefore, the above information seems to support the hypothesis that in the case of infant mortality there is no negative impact from the costs associated with the breakup of the larger states which the three analysed countries were part of. In addition, one may notice the positive influence of the successes related to the transformation process and the progress in the care of women during pregnancy and childbirth and of new-born infants and babies. But on the other hand, one must bear in mind that if the analysis was based on the data directly reported by individual countries, instead of on the estimated data, the situation in this field would have appeared slightly less optimistic¹¹. In comparison with the two other countries, one can talk about an unusually large improvement in

¹¹ For example, comparing the data directly supplied by countries with the estimated data for the period 1990–2012 for the Czech Republic, we obtain the value of 10.8 deaths per 1,000 live births from the first type of data (European health for all database (HFA-DB) and 6.4 from the second type of data, respectively (World Bank Open Data 2015). More information on the estimation method: UN Inter-agency Group for Child Mortality Estimation 2015.

Estonia¹² and a smaller one in the Czech Republic and Slovenia.

The average level of the difference between life expectancy at birth between males and females (in years) for the years 1990–2013 was distinctly the largest in Estonia (as many as 11.0 years to the disadvantage of men) and decidedly smaller in Slovenia (7.3) and the Czech Republic (6.6). In contrast, the situation in this respect in all three countries changed little, being the most stable in Estonia (RSD=6.8%) and only slightly less in Slovenia (7.8%) and the Czech Republic (8.4%).

Looking at the changes in the difference in life expectancy at birth between females and males (in years) in different years, we see a clear duality of the situation (Fig. 4). On the one hand, the Czech Republic and Slovenia have a definitely

¹² Especially in the countries of the former USSR that have not implemented reforms or have done it sluggishly, an initial deterioration in the situation was reported, e.g. in Moldova, Belarus and Ukraine increases in the estimated infant mortality rate were noted until 1996.

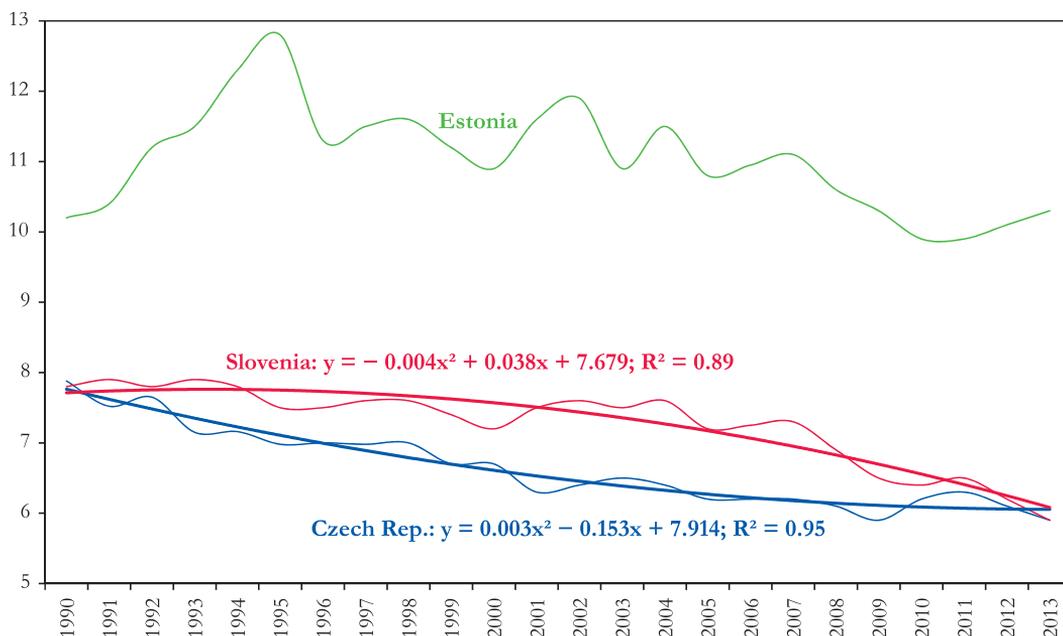


Figure 4 Changes in the difference in life expectancy at birth between males and females (in years) for the years 1990–2013. Source: own elaboration based on data from the World Bank Open Data 2015.

better situation than Estonia and additionally with a clear downward trend¹³. Yet, in the case of Estonia there is a lack of such a distinct tendency. Initially (until 1995), there was a very fast growth in the differences, which then changed into a very faint downward trend. In the case of the difference in life expectancy at birth between females and males (just as in CDR), one can see a similarity in the situation between the Czech Republic and Slovenia (PCC=0.75), a slightly less pronounced one between Estonia and Slovenia (PCC=0.64), and very small similarities between Estonia and the Czech Republic (PCC=0.30).

Larger differences in life expectancy at birth between females and males occur in European post-Soviet countries than in other European post-Communist countries (Michalski 2010). One can try to

associate this with the model of the homo sovieticus, strongly imbedded in the post-Soviet societies, especially among the Russian-speaking populations (Zinoviev 1986; Tischner 2005). It is characterised by a negative impact on health related behaviours, especially among men¹⁴, while gender differences in health in the countries of Central Europe, such as the Czech Republic, are closer to Western European standards (Hraba et al. 1996; Rychtaříková 2000, 2007). An indirect confirmation of this thesis can be found when analysing the difference in life expectancy at birth between females and males in the case of Estonians and non-Estonians (who constitute nearly 1/3 of the country's citizens). The mean difference in the years 2006–2013 was 9.8 years for Estonians, while for non-Estonians it was 11.5 years¹⁵. Keeping in mind that the biologically conditioned difference in life expectancy at birth between females and males is about one to two

¹³ However, it takes different forms, as can be seen in the recording of the regression function. In the Czech Republic, from the very beginning a decrease in the difference was reported, which slowed down over time, while in Slovenia it was the opposite: initially a small drop, which accelerated at the end of the analysed period.

¹⁴ Of course, this is not the only factor, but its effect on risky behaviours primarily associated with alcoholism or nicotinitism is tremendous.

¹⁵ Own calculations based on data from: Health Statistics and Health Research Database.

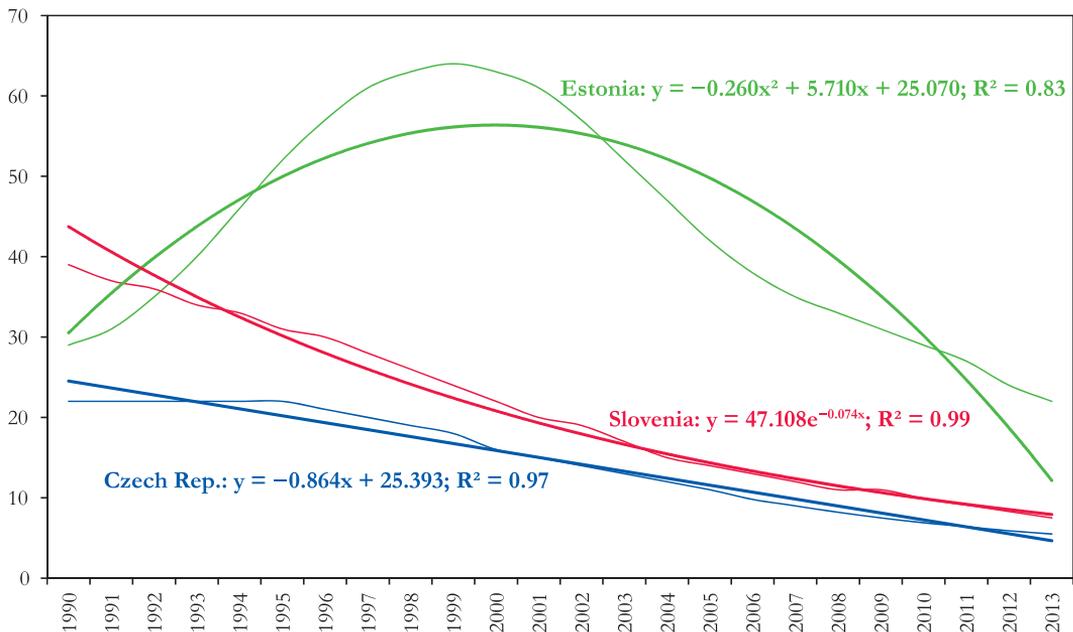


Figure 5 Changes in the incidence of tuberculosis (per 100,000 people) in the years 1990–2013.
Source: own elaboration based on data from the World Bank Open Data 2015.

years, to the disadvantage of men, we see that in Estonia (despite obvious successes in many areas of the transformation) in the case of the difference in life expectancy at birth between females and males, there is still very much to do, much more than in the Czech Republic and Slovenia¹⁶.

In the years 1990–2013 the mean level of the incidence of tuberculosis per 100,000 people was by far the highest in Estonia (as much as 43.6). Both in Slovenia (21.1) and in the Czech Republic (14.6) it was definitely lower. As is often the case with illnesses, there was a high variability in the situation, greater in Slovenia (RSD = 48.8%) and the Czech Republic (42.5%), and lower in Estonia (32.2%).

Examining the changes in the incidence of tuberculosis per 100,000 people over time, one can see clearly that in the case of Estonia they are definitely

different from Slovenia and the Czech Republic (Fig. 5). This is confirmed by the PCC value, which for the pairing of Slovenia and the Czech Republic is as high as 0.98, while for the pairing of the Czech Republic and Estonia it is 0.49, and for the pairing of Estonia and Slovenia it is 0.32. If, in the case of the Czech Republic and Slovenia, there is a very clear downward trend, then in the case of Estonia a rapid increase in morbidity was reported until 1999, and it was only after that year a turning point and a downward trend appeared.

Symptomatically, during earlier analyses, it was clear that the situation at the end of the analysed period was better than at the beginning. However, in the case of the incidence of tuberculosis per 100,000 people in Estonia, it was only slightly better¹⁷. It should be noted here that, in general, in all the post-Soviet states there was an increase in the incidence of tuberculosis, and that the situation in Estonia was still the best compared to

¹⁶ Anyway, these are not the only problems in Estonia connected with the vast Russian-speaking population (Evans 1998; Aasland and Flotten 2001; Pfoser 2014), which are the result of the colonisation of this area by the authorities in Moscow during the occupation (Annus 2012).

¹⁷ The incidence of tuberculosis per 100,000 people in Estonia amounted to 29 in 1990, while in 2013 it was 22 (World Bank Open Data 2015).

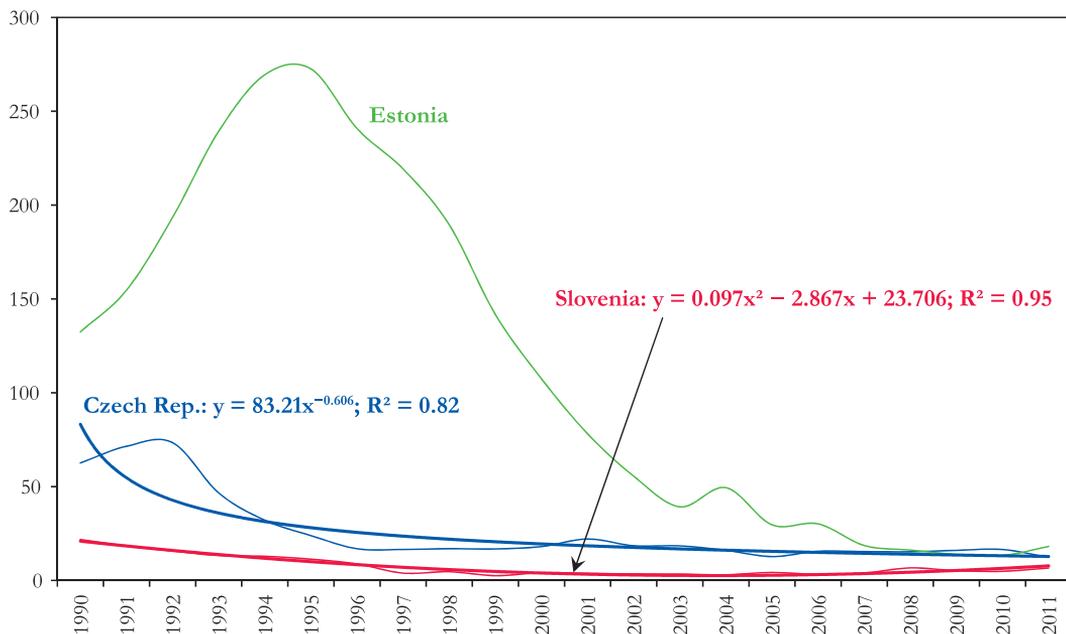


Figure 6 Changes in the incidence of syphilis and gonorrhoea infections (per 100,000 people) in 1990–2011. Source: own elaboration based on data from the European health for all database (HFA-DB).

other post-Soviet countries¹⁸. However, in the vast majority of post-Communist countries which were not part of the USSR, there was a downward trend (with the only pronounced exception being Romania). Still, in the majority of these countries the situation was worse than in the countries of the “old” European Union. For a long time the Czech Republic was the only positive exception (Kaufmann 2004), and at present it is a similar situation with Slovenia. In the case of Estonia, it would be interesting to compare the incidence of tuberculosis among Estonians and non-Estonians. Unfortunately, the data on this topic was unavailable. We only managed to find that in 2012 the highest incidence of tuberculosis, amounting to 41/100,000 people (with the mean value for Estonia being 22), was reported in Ida-Viru county in which Russians constitute as much as 72.4% of the population¹⁹.

¹⁸ For example, in Moldova the level of the incidence of tuberculosis amounted to 56/100,000 people in 1990, while in 2013 it was as many as 159/100,000 (World Bank Open Data 2015).

¹⁹ Own calculations based on: Health Statistics and Health Research Database and Statistics Estonia 2015.

The mean level of the incidence of syphilis and gonorrhoea infections per 100,000 population in 1990–2011 was much higher in Estonia (114.7) than in the Czech Republic (26.1) and Slovenia (7.5). Yet the variability of the analysed process was similar in the Czech Republic (RSD = 73.1%) and Slovenia (73.8%) and slightly higher in Estonia (81.5%).

Analysing changes over time in the level of the incidence of syphilis and gonorrhoea infections per 100,000 population, one can conclude that they followed a completely different course in Estonia than in the Czech Republic and Slovenia (Fig. 6). This is further confirmed by the PCC value, which for the pairing of the Czech Republic and Estonia is 0.42, for the pairing of Estonia and Slovenia it is 0.51, while for the pairing of the Czech Republic and Slovenia it is as much as 0.89. In the case of Slovenia there was a very clear downward trend and in the case of the Czech Republic it was slightly less clear (for the years 1990–1992 a slight increase in morbidity was reported), while in the case of Estonia a very high increase in the incidence continued

until 1995²⁰ and it only changed to a downward trend after that year.

Looking at changes over time and the level of incidence rates of syphilis and gonorrhoea infections, we see a partial similarity to the previous analysis of the incidence of tuberculosis. Anyway, if one was to compare the situations in post-Soviet countries and other post-Communist countries, it would appear that the changes in the Czech Republic and Slovenia are typical of other post-Communist countries (except Romania and Bulgaria, where periodically large increases in morbidity were reported), while the changes in Estonia are typical of other post-Soviet countries (although Estonia's increase was the smallest of them all). It seems, therefore, that in Estonia the incidence of STD was negatively influenced by the same factors as in other post-Soviet countries. On the other hand, it is difficult to assess the impact of the country's ethnic diversity (two main groups) on the incidence of STD and on other changes in the incidence of syphilis and gonorrhoea infections²¹. In turn, in the case of Slovenia, one can see a partial confirmation of the theory that the society's well-being (Šprah et al. 2014) has an impact on the low incidence of STD.

CONCLUSIONS

In the period after the fall of Communism an improvement in the health situation of their inhabitants occurred in all three analysed countries. It is evident that in the initial period of transformation the health situation of the citizens of the Czech Republic and Slovenia was slightly better than for those of Estonia (this is apparent in the case of estimated infant deaths, the difference in life expectancy at birth between females and males, and the incidence of syphilis and gonorrhoea infections).

²⁰ The level of analysed morbidity in Estonia in 1995 (272.6/100,000 people) was as much as 206% of the level from 1990 (132.4/100,000 people) (own calculations based on: European health for all database (HFA-DB).

²¹ From Nikula's et al. research (2009), it follows, for example, that while there are clear differences in the use of condoms during sexual intercourse by young Estonians and non-Estonians living in this country, there are many more factors contributing to the spread of STD.

Furthermore, looking at the changes in the situation, one can see that in Estonia there was a periodical deterioration in the inhabitants' health situation (in particular as regards the crude death rate, the incidence of tuberculosis, and the incidence of syphilis and gonorrhoea infections).

Undoubtedly, improvements in the health situation of the population in the area under consideration were affected by successes and failures that occurred during the process of transformation (Michalski 2010). But the health situation in post-Communist countries is still worse than in Western Europe (Stiperski and Lončar 2011). Without doubt, Estonia had the most difficult situation of the three countries analysed here, but at the same time its transformation was the most successful of all the post-Soviet countries. One can generally claim that Estonian society was affected by the same problems as all the countries of the former USSR after its disintegration. These problems resulted from the worsening economic situation and also from the malfunction of social structures, lack of perceived control, belief in a lack of prospects for the future, etc. (Field 1995; Bobak et al. 1998; Abott and Sapsford 2006; Cockerham et al. 2006a, 2006b). On the other hand, the successful reforms in Estonia (Drábek 1999; Panagiotou 2001; Raun 2001; Aidukaite 2006; Feldmann 2013; Abrams and Fish 2015) caused a relative improvement in the health situation of the Estonian population²² (Kaasik et al. 1998; Helasoja et al. 2006; Teichmann et al. 2006; Ainsaar and Maripuu 2008). One can, therefore, venture to declare that the Estonian experience was and is much more traumatic than the feelings of Czechs (Illner 1998) and Slovenes (Niebuhr 2006) in this respect. This was partly reflected in the deterioration of the health situation of the inhabitants of Estonia in the early years of the transition.

In the coming period one can expect a further deterioration of the health situation in the populations of the three analysed states (but not necessarily in

²² Even the differences in the availability of the public health care system, caused by ethnic divisions, are poorly noticeable (Habicht and Kunst 2005), which should be considered as another Estonian success.

terms of the processes analysed in this article). This is a result of the already existing process of the ageing of their populations (Ainsaar and Maripuu 2008; Herlofson and Hagestad 2011; Káčerová et al. 2013; Fassmann et al. 2014; Kerbler 2015). It is confirmed by demographic forecasts, according to which the further ageing of the population will increase (Maamägi 2007; Fiala et al. 2011; Lah et al. 2014), which is partly related to the Second Demographic Transition (Rychtaříková 1999; Sobotka 2008) and partly results from the specifics of these three countries.

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Résumé

Změny zdravotní situace v České republice, Estonsku a Slovinsku v průběhu transformačního období

Príspevok analyzuje zdravotní situaci ve třech nejvíce rozvinutých zemích ze všech států, které vznikly v důsledku rozpadu Československa, Jugoslávie a Sovětského svazu. Výběr analyzovaných států byl uskutečněn aplikací ukazatele, jímž je Perkalův syntetický index. Tento index byl sestaven na základě syntézy následujících ukazatelů: Legatum Prosperity Index, the Social Progress Index, the Index of Economic Freedom, the World Press Freedom Index, the Corruption Perceptions Index, HND na obyvatele v paritě kupní síly (v aktuální hodnotě dolaru).

Časově je příspěvek zahrnován transformačním obdobím, které je zde vymezeno od roku 1990 do roku 2013. Pro potřeby analýzy situace v oblasti zdraví bylo použito celkově pěti proměnných. Konkrétně se jednalo o hrubou míru úmrtnosti (počet zemřelých připadajících na 1 000 obyvatel středního stavu), odhadovaný kvocient kojenecké úmrtnosti (počet zemřelých do 1 roku života na 1 000 živě narozených v daném roce), rozdíl ve střední délce života při narození mezi ženami a muži (v letech), výskyt tuberkulózy (počet nakažených na 1 000 obyvatel středního stavu), výskyt syfilidy (počet nakažených na 1 000 obyvatel středního stavu) a výskyt kapavky (počet nakažených na 1 000 obyvatel středního stavu). Použity byly následující metody analýzy proměnných: aritmetický průměr, relativní směrodatná odchylka, Pearsonův korelační koeficient a autoregresivní model (koeficient determinace vyšší než hodnota 0,80).

Uskutečněnou analýzou bylo zjištěno, že v případě všech tří hodnocených zemí došlo po roce 1990 ke zlepšení zdravotního stavu obyvatel těchto států, ačkoliv bylo zřejmé, že v počáteční fázi transformačního období byla zdravotní situace občanů České republiky a občanů Slovinska mírně lepší než v případě občanů Estonska (tato skutečnost je evidentně doložená v případě odhadovaných kvocientů kojenecké úmrtnosti, v případě rozdílů

v naději dožití při narození mezi ženami a muži a v případě výskytu syfilidy, jakožto i infekcí kapavky). Jestliže v České republice a ve Slovinsku převažoval zlepšující se trend ve zdravotní situaci obyvatelstva v průběhu téměř celého období, které bylo podrobena analýze, v Estonsku se situace mírně diferencovala. Pokud jde o hrubou míru úmrtnosti, výskyt tuberkulózy, výskyt syfilidy a infekci kapavky, tak původně se situace v Estonsku zhoršovala, přičemž tendence ke zlepšení lze pozorovat až v druhé části analyzovaného období.

Vybrané úspěchy v procesu postkomunistické transformace hodnocených států nepochybně ovlivňovaly vývoj zlepšování zdravotního stavu populací těchto státních útvarů. Nicméně je potřeba dodat, že zdravotní situace obyvatel postkomunistických států je stále horší než v případě států západní Evropy.

Není pochyb o skutečnosti, že Estonsko mělo v kontextu států podrobených analýze nejsložitější situaci, a to především v úvodní fázi transformačního období. Na druhou stranu je možné konstatovat, že transformace Estonska proběhla nejúspěšněji ze všech zemí bývalého Sovětského svazu. S největší pravděpodobností lze tento fakt připisat hodnotovým postojům obyvatel tohoto státu. V současné době je možné očekávat zvyšující se výskyt zdravotních problémů v případě všech tří hodnocených států. V pozadí této skutečnosti je postupující proces stárnutí společností ve střední a východní Evropě.

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