SOCIAL DIFFERENCES IN MORTALITY, MORBIDITY, AND HEALTH-RELATED BEHAVIOUR DURING TRANSITION: RESEARCH FINDINGS IN THE THREE BALTIC COUNTRIES[1]

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1 Introduction

In the three Baltic countries, just like in most of the post-Soviet world passing from centrally planned to market economies, the growth of mortality started accelerating in the late 1980s, acquiring an unprecedented extent in the early 1990s. However, since the mid-1990s mortality trends have been changing again: the enormous decline in the situation of the most recent past is being overcome (Fig. 1). Thus, during the nearly ten-year-long transitional period, mortality changes in the Baltics have been diverse and by no means unilateral: in some years the trends have even changed their directions. However, from a long-term perspective, the shifts in mortality during the transitional period can hardly be identified as the formation of a new mortality pattern. Most likely, the transitional period has not changed the mortality patterns of recent decades (Katus, Puur, 1997) but only made them more conspicuous.

The recent changes in mortality typical of the Baltic countries and the whole post-Soviet region have drawn the attention of researchers both in the countries concerned, and beyond. Researchers stress that the Eastern European and, in a way, Central European mortality changes of the last three decades are unique in their features. They are defined as a new pattern of epidemiological transition, one that deviates from the collective experience of other developed and middle-income countries (Murray, Bobadilla, 1997).

The aim of this article is to make an overview of the research findings on the differences observed in mortality, morbidity, and health-related behaviour in the Baltic countries during the transitional period.

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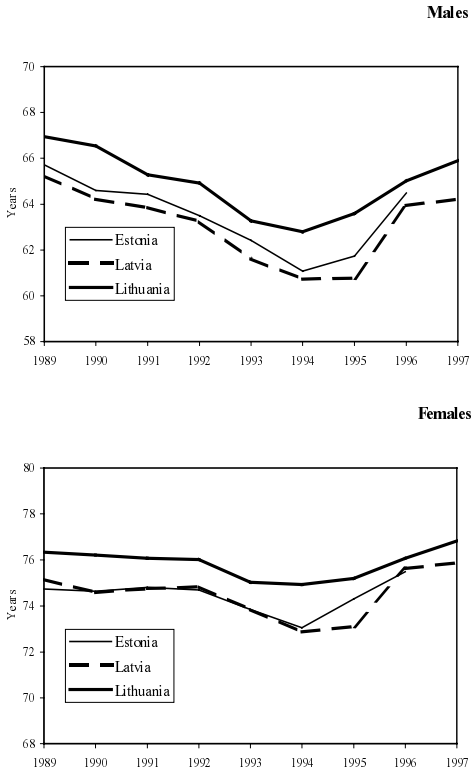
Figure 1 *Life expectancy at birth, 1989-1997*



Source: Stankūnienė, Eidukienė, 1999

However, in an attempt to survey the research findings on mortality, morbidity, and health behaviour during the period of transition, several difficulties are faced. First, although mortality research in the region intensified significantly during the transitional period, it concentrated mostly on the investigation of mortality trends and features and the reliability of the data of the Soviet period. After the Soviet period, which was characterised by limited access to mortality data and restrictions on the publication of investigations, since the thaw years (late 1980s) the researchers of the field jumped at the opened opportunity to investigate mortality issues, putting a particular emphasis on the evaluation of retrospective mortality trends and patterns.

Second, the ability to understand the current changes in mortality and the possibility to make fundamental conclusions is strongly impaired by the shortness of the transitional period and the contradictory socio-economic and mortality trends. Thus, a considerable proportion of research findings are rather descriptive or hypothetic in character.

It must also be noted that the number of researchers with highly varying degrees of preparedness and experience in the field has increased considerably during transition. Therefore, the mushrooming publications on mortality are highly uneven in their scientific value. Still, it must be stated that during transition the research into trends and differences in mortality in the Baltics has been growing fast. In adopting the experience of more advanced countries, mortality research increasingly applies progressive research methods and investigates a broader spectrum of topics. The reliability and comparability of the findings are also given very serious consideration. Investigations into health-related behaviour, as one of the decisive differentiating factors of mortality and morbidity, have been growing. Mortality, morbidity, and health behaviour have become the objective of investigation for specialists in different fields: demographers, epidemiologists, sociologists, and psychologists. Much of the research is conducted in the framework of international co-operation.

2 Data and surveys

In this article a survey is made of publications on mortality, morbidity, and health behaviour based on the following recent demographic and medical statistics and the findings of specific research on all three Baltic states:

- Data from official statistics – vital statistics data;
- Data from cause-specific registers – cancer registry data;
- Complex and specific research findings – Lithuanian joint research "Mortality Trends, Causes, Risk Factors and Reliability of Data in Lithuania" carried out by the Lithuanian Institute of Philosophy and Sociology, the Kaunas Medical University, the Institute of Cardiology, Vilnius University, and the Lithuanian Oncology Center (1998-2000); the international project "Health Crisis in Baltic Countries" (the research is coordinated by the Institut National d'Etudes Demographiques, France) and conducted by an international team from the Institute National d'Etudes Demographiques, the University of Latvia, the Estonian Interuniversity Demographic Research Centre, the Department of Demography of the Lithuanian Institute of Philosophy and Sociology, and the Centre of Human Ecology and Demography of the Institute for Economic Forecasting of the Russian Academy of Sciences;
- MONICA (in the framework of the WHOs Monitoring of Trends and Determinants in Cardiovascular Disease project, the survey in the Lithuanian city of Kaunas was launched in 1982 and has been carried out ever since (of the post-Soviet countries only Russia and Lithuania participated); CINDI (Country Wide Integrated Noncomunicable Disease Intervention – in Lithuania the work for this international project has been executed since 1982); other research undertaken by different scientific and state institutions;
- Results of surveys: the FINBALT HEALTH MONITOR – research was initiated by the National Health Institute in Finland and carried out in Estonia in 1990, 1992, 1994, 1996, and 1998, in Lithuania in 1994, 1996, and 1998, and in Latvia in 1998 (the findings for 1998 have not yet been published and are therefore not used in this article); Health Behaviour Monitoring Among Children and Adolescents carried out by the Kaunas Medical University (Lithuania) in 1970-1995; the NORBALT Living Conditions surveys implemented in Latvia and Lithuania in 1990 and 1994.

3 Trends and differences in mortality during the transitional period: patterns of the past continued

In order to make a survey of research findings on differences in mortality, morbidity, and health behaviour in the three Baltic states during the period of transition, a rough outline of the attainments in analysing the long-term trends, particularly those just before the transitional period, is due.

The most important argument in favour of such a proposal is the fact that, as a number of analysts from the Baltic nations and other countries dealing with the mortality trends of the area have observed, the mortality changes which have been taking place during transition are not a new phenomenon in the region of the former

Soviet Union but a continuation of the processes which started during Soviet rule, and since the mid-1960s, the beginning of the period of mortality stagnation, the mortality pattern has, in fact, remained unchanged (Bobadilla, Costello, 1997; Murray, Bobadilla, 1997; Katus, Puur, 1997; Krūmiņš, 1997; Shkolnikov, Nemtsov, 1997; Vishnevsky, 1999). Different investigations have, therefore, examined most of the recent mortality changes against the background of the past trends. Furthermore, the transitional period is too short in duration for an adequate profile and shape of the new mortality features to be defined.

The Baltic researchers of the field (Krūmiņš, 1994, 1997, 1998; Čiurlionytė, 1993; Värnik, 1997) have identified several periods in mortality evolution (trends of life expectancy, changes in age patterns of mortality, etc.) in their respective countries during the second half of the century. The most detailed periodisation of mortality evolution, taking into account the mortality features of the transitional period, has been proposed by Krūmiņš (1997, 1998). On the basis of life expectancy changes in Latvia, Krūmiņš has identified the following periods: 1) from late 1950 to 1965; 2) from 1965 to 1979; 3) from 1979 to 1988/89; 4) from 1988/89 to 1995; 5) from 1995 up to now[2].

Specific features of the first period are a decrease in mortality and an increase in life expectancy at birth. The second period is called the stagnation period, during which life expectancy at birth began decreasing due to increasing mortality. The main attribute of the third period is the fluctuation of mortality and life expectancy at birth. In the mid-1980s, at the peak of the anti-alcohol campaign, life expectancy at birth increased; however, it started declining again in the late 1980s. The fourth period involves the rapid drop in life expectancy at birth that was observed during the initial stage of the recent fundamental changes in the social, economic, and political spheres (Krūmiņš, 1994, 1997, 1998; Čiurlionytė, 1993). During this period, mortality differences rose sharply. The fifth period is a period of improving mortality trends (Krūmiņš, 1998).

Regarding Estonia, demographers Katus and Puur (1997) have defined the whole 1959-1989 period as a period of mortality stagnation, although until the mid-1960s and in the mid-1980s life expectancy had been on the rise. In their identification of this particular mortality stagnation period, Katus and Puur put emphasis not on the importance of the mortality level, which is expressed in terms of life expectancy, but on the changes in age-specific mortality rates and the mortality pattern, which are primarily expressed by mortality differences. According to Katus and Puur, the mortality stagnation of 1959-1989 could be characterised not so much by an absence of improvement in the mortality level but mainly by the deterioration of the age-specific mortality pattern (Katus, Puur 1997). Specifically, during this period the essence of the mortality pattern that began to take shape in Estonia and other Soviet-bloc countries became apparent and manifested itself, first of all by increasing age-sex and residential mortality differences (Krūmiņš, 1994; Čiurlionytė, 1993; Katus, 1997).

Attempts of the Baltic researchers to split the fluctuating mortality trends into periods are also seen in the analysis of certain causes of death. In their examination of mortality caused by coronary heart disease, Kalėdienė and Petrauskienė (1995) identify the following periods: 1) 1970-1985, the period of stagnation; 2) 1986-1990, which coincided with the alcohol restriction policy, and 3) since 1991, the period of transition.

[2] This period has not been included in the chart of mortality periodisation.

In the analysis of suicides and the socio-political and economic changes which have had an impact on this phenomenon, Värnik (1997) details the transitional period. By factors which could have had impact on the suicide rate in Estonia during the last three decades, the following periods are proposed by her: 1965-1984 – stagnation; 1986-1991 – political reforms; and since 1992 – economic reforms. She notes that each of the periods has had a specific effect on the trend and differences of suicide according to age, sex, residence, and ethnicity.

4 Findings concerning mortality differences

Interpretation of the general trends of mortality, their periodisation, the specification of the mortality stagnation period, and hypotheses about their continuation in the transitional period are already indicative of the essential mortality and life expectancy differences in the Baltic States. Age-sex differences are the principal differential mortality features typical of the mortality pattern both during the Soviet and the transitional periods. These mortality differences have been investigated most thoroughly. Mortality differences according to residence have not been subjected to such a profound analysis, although they have been examined by many researchers (Krūmiņš, 1994, 1993, 1995, 1997, 1998; Čiurlionytė, 1993, 1995; Kalėdienė, 1995, 1997; Katus, Puur, 1997; Stankūnienė, 1996; etc.). Other mortality differences have not been sufficiently investigated, and only a few authors present findings on mortality differences according to marital status (Krūmiņš, 1995; Petrauskienė et al., 1995), education (Krūmiņš, 1993, 1998; Kalėdienė, 1996), social status (Krūmiņš, 1993 a, 1995; Zvidriņš, Krūmiņš, 1993), and ethnicity (Krūmiņš et al. 1991, Krūmiņš 1994, 1993; Zvidriņš, 1995; Värnik, 1997; Katus, Puur, 1990). However, in most of these works the latest information covers just the initial stage of the transitional period, i.e. the end of the 1980s, called the period of political reforms by Värnik (1997). As a matter of fact, it is Värnik who has made a somewhat more profound analysis of suicide differences according to ethnicity in the later years of the transitional period, 1996 included.

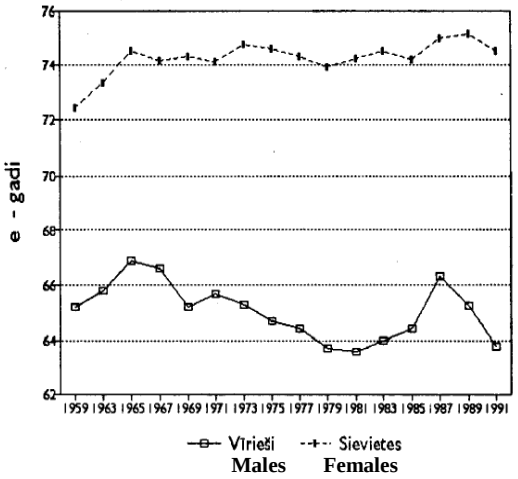
4.1. Mortality differences according to age and sex

Before summarising the research findings on the differences in mortality according to age and sex during the transitional period, a short overview of conclusions concerning the pre-transitional period is due. Although the interpretations of age-sex differences in mortality are not uniform in their level of theoretical considerations in the works of Baltic researchers and contain, quite frequently, rather contradictory causality substantiations, still, the findings disclose some principle differentiating features which could pass for an age-sex mortality pattern typical for the countries of the former Soviet system.

From the mid-1960s until the transitional period, the increase in mortality was basically influenced, regardless of fluctuations, by increasing male mortality and the growing difference between male and female mortality. This can be seen from the growing gap in the trends of life expectancy at birth demonstrated by the cases of Latvia and Lithuania (Figs. 2, 3).

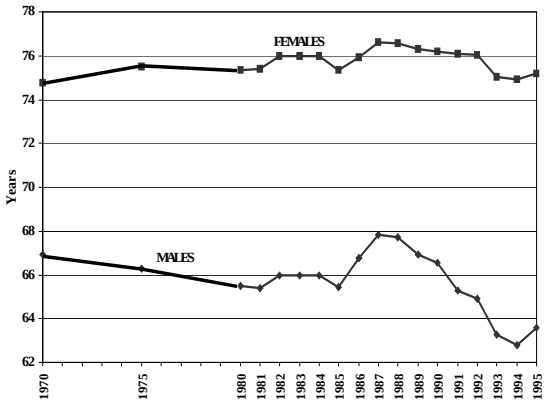
An estimation of the period proposes that the fluctuating increase in the overall mortality level was proceeding due to decreasing infant mortality and the sharply increasing mortality of young and middle-age males. The mortality under consideration was more pronounced in the rural than the urban male population. An extremely steep rise in mortality due to cardiovascular disease was observed among men 30-59 years of age (Čiurlionytė, 1995). If a comparison of death indicators of this cause in the above age group of men, taking into consideration the marginal years of the period, is made (disregarding the decrease of mortality due to this cause in the years of the anti-alcohol campaign in the mid-1980s), it can be seen that mortality of the men mentioned above rose approximately 2.5 times from the mid-1960s to the early 1990s (Čiurlionytė, 1995). Female mortality was actually stagnating from the mid-1960s to the transitional period, while infant mortality was further declining.

Figure 2 *Life expectancy at birth in Latvia, 1959-1991*



Source: Krūmiņš, 1993

Figure 3 *Trends of life expectancy at birth for Lithuania*



Source: Stankūnienė, 1996

In the Baltic countries, mortality differences by age and sex during the transitional period have not been subjected to a detailed examination. However, on the basis of the works of Latvian (Krūmiņš, 1997, 1998, etc.), Lithuanian (Čiurlionytė 1995; Kalėdienė, 1995, 1997; Stankūnienė, 1995), and Estonian (Katus, Puur, 1997; Värnik, 1997) authors, some estimations and conclusions can be made.

First, it should be noted that during the first years of the transitional period, differences in life expectancy and mortality increased. The decline in male life

expectancy was more pronounced than the decline in female life expectancy. Excess male mortality increased for all of the main causes of death, excluding malignant neoplasms (Krūmiņš, 1997). These observations were made for Latvia, but hold true for the other Baltic countries.

As early as the late 1980s, i.e. the beginning of the transitional period, the Baltic countries registered wide gaps between male and female life expectancy at birth. In 1989, they comprised 9.03 years in Estonia, 9.91 years in Latvia, and 9.39 years in Lithuania. In 1994 these differences had reached, correspondingly according to country, 11.32, 12.15, and 12.16 years (Stankūnienė, 1996; Stankūnienė, Eidukienė, 1999). Since the mid-1990s, the gaps have slowly been narrowing, and in 1997 they were 11.29, 11.67, and 10.92 years respectively (calculated from: Stankūnienė, Eidukienė, 1999).

The overall change in life expectancy at birth masks divergent trends in child and adult mortality during the 1990s (Krūmiņš, 1997). In Latvia, about 80 percent of the decrease in total life expectancy in 1988-1995 for both men and women was due to an increase in mortality for people of working age (especially from 25 to 64 years of age) (Krūmiņš, 1998).

This thesis is more detailed in the case of Estonia. A comparison of the annual mortality rates for the years 1990-1994 to the level registered in the census year 1989, reveals a progressive increase in the mortality curve as well as shifts in it. In the case of the male population, mortality has been developing one way, adding its contribution to the cumulative effect each year. Mortality rates have increased in all age groups, except under age ten where a noticeable decrease has occurred. The growth has been the highest among middle-aged men, doubling the level of 1989 in some age groups. In the age range of 20-49, the increase has averaged about 150 percent. Moving towards older ages, the growth of mortality gradually slows down and becomes negligible beyond age 70. Nevertheless, no decline in mortality could be observed in any of the older age groups either. Female mortality does not display such a clear one-way trend from year to year. However, the principle direction of changes seems similar: the highest increase is observed among middle-aged females (Katus, Puur, 1997).

4.2. Mortality differences according to residence

Mortality differences according to residence, notably rural-urban, are largely indicative of social differences: urban-rural differences in the quality of social services (especially, medical services), in working conditions and culture, in education, in life-style, and in standards of hygiene and alcohol consumption. During the pre-transitional period, all of the Baltic countries experienced pronounced urban-rural differences in mortality, particularly male mortality (Krūmiņš, 1994, 1995, 1997; Katus, Puur, 1997; Čiurlionytė, 1995; Stankūnienė, 1995). At the beginning of the transitional period (in 1989) in Latvia, life expectancy at birth (LEB) in urban areas exceeded that in rural areas by 5 percent for males and 1.2 percent for females; the urban-rural difference of LEB for both sexes constituted 1.98 years (Krūmiņš, 1997, 1998). In Lithuania and Estonia, urban-rural mortality differences were higher at the time. In 1989, LEB in the urban areas of Lithuania was higher than in the rural areas by 5.8 percent for males and by 1.9 percent for females, and the urban-rural difference in LEB for both sexes was 2.95 years (calculated from: Demographic, 1998). In 1989, the difference in LEB between the sexes equalled 2.3 years in Estonia (calculated from: Katus, Puur, 1997). In

1989, mortality among the men of early and middle working ages in rural areas of Lithuania was almost twice as high as that in urban areas. In comparison with the standardised mortality coefficient at the age of 15-59, mortality in the rural areas of Latvia was one fourth higher than that in urban areas (Zvidriņš, 1995).

The above indicators denote that mortality changes in the urban and rural areas of the Baltics were fairly divergent between 1989 and 1994. Although mortality in rural areas, especially among children and early adult age groups, remains much higher than in towns (Krūmiņš, 1997; Katus, Puur, 1997; Stankūnienė, 1996), regarding Latvia, some peculiarities are typical for its urban-rural mortality trends of the 1990s (Krūmiņš, 1997). In the case of Latvia, the transition, especially in 1993, nearly stopped the comparatively rapid growth of mortality that had been quite common in rural areas (Krūmiņš, 1998). Although LEB in Latvia had reached a very low level in rural areas by 1994: 59.5 years for men and 72.9 years for women (Krūmiņš, 1997), changes in the urban areas were, contrary to the trends observed before the transition, more radical than in the rural areas (Table 1). In 1995, the difference in urban-rural LEB for both sexes in Latvia was 1.28 years, while in 1997 it was 1.52 years (Krūmiņš, 1997). Meanwhile, during the transitional period in Estonia, urban-rural mortality differences have been maintained and the trends of both rural and urban populations have been following a similar pattern (Katus, Puur, 1997). In Lithuania, the beginning of the transitional period was marked by rapidly increasing male mortality (Stankūnienė, 1996). In 1995 LEB in urban areas of Lithuania exceeded that in rural areas by 6.8 percent for males and 1.8 percent for males. In Lithuania, this difference in urban-rural mortality has continued to grow, despite the fact that the overall mortality trends have started improving since 1995; in 1997 this indicator reached 7.9 percent for men and 3.1 percent for women. The urban-rural difference in LEB for both sexes in Lithuania has risen to 3.34 years in 1996 and 4.19 years in 1997 (calculated from: Demographic, 1998).

During the first transitional years, perinatal, neonatal, and infant mortality in the rural areas of Latvia was higher than in the towns (Krūmiņš, 1995). This is similar to what happened during the Soviet period.

Table 1 *Life expectancy at birth changes and differences by sex and urban-rural residence in Latvia during 1989-1997*

Year	LEB changes to previous year				LEB differences	
	Male	Female	Urban	Rural	Fem.-Male	Urban-Rural
1988	-	-	-	-	8.88	2.60
1989	-1.01	+0.02	-0.66	-0.02	9.91	1.98
1990	-1.04	-0.58	-0.84	-0.82	10.37	1.96
1991	-0.36	+0.17	+0.10	-0.40	10.90	2.46
1992	-0.60	+0.08	-0.67	-0.06	11.58	1.85
1993	-1.64	-0.99	-2.21	-1.05	12.23	0.69
1994	-0.89	-0.97	-0.45	-0.32	12.15	0.56
1995	+0.04	+0.23	+0.65	-0.03	12.34	1.24
1996	+3.18	+2.52	+2.71	+2.02	11.68	1.93
1997	+0.27	+0.26	+0.52	+0.94	11.67	1.52

Source: Krūmiņš, 1998

Some research findings on urban-rural mortality differences due to certain causes of death during the transitional period have been published. The most impressive findings have been made by Gailienė (1998 a, 1998 b), Värnik (1997), and Krūmiņš (1993 b) in examining urban-rural differences in suicide trends among the populations of Lithuania, Estonia, and Latvia. According to the summary outline presented by Värnik (1997), the suicide rates of males in rural areas exceeded those of males in urban areas during the pre-transitional period, the period of political reforms (1986-1991), and the period of economic reforms (since 1992). In 1986-1991 the suicide rates in Estonia amounted to 33.5 per 1,000 for the rural population and 23.2 per 1,000 for the urban population. In 1992-1995 these figures were, 42.7 and 34.7 respectively. The suicide rates increased, from 53.4 to 74.3 for males in rural areas and from 35.8 to 57.1 for males in urban areas during the periods 1986-1991 and 1992-1995 (Table 2). However, the findings of Värnik's research reveal that although suicide rates are much higher in the rural areas of Estonia, during the transitional period the rates for urban areas were growing slightly faster than in rural areas, notably among males (Table 2).

In the early transitional period, similar trends were noticed in Latvia as well (Krūmiņš, 1993 b). Krūmiņš has noted that during 1987-1991, age-specific mortality due to suicide grew at a slightly lower rate for the rural population than for the urban population.

Table 2 *Suicide rates in Estonia*

	1986-1991			1992-1995			Ratio		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Males	53.4	35.8	41.0	74.3	57.1	63.6	39.1	59.5	55.1
Females	15.2	12.5	13.2	13.4	15.6	15.2	8.8	24.8	15.2
Total	33.5	23.2	26.2	42.7	34.7	37.8	27.5	49.6	44.3

Source: Värnik, 1997

Table 3 *Suicide rates. Lithuania*

	1986-1990			1991-1996			Ratio		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Males	67.5	33.8	44.7	102.2	53.1	68.8	51.4	57.1	53.9
Females	12.2	9.0	10.7	18.0	11.6	13.6	47.5	28.8	27.1
Total	37.7	21.5	26.7	58.2	31.1	39.7	54.4	44.7	48.7

Source: Gailienė, 1998, 1999a, manuscript

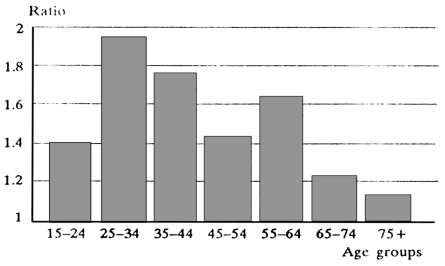
However, as in previous years, rural age-specific suicide mortality rates have remained considerably higher than the rates in urban areas (Fig. 4).

During the transition in Lithuania, contrary to Estonia and Latvia, urban-rural mortality trends due to suicide have proceeded in the same direction as in the pre-transitional period. Suicide mortality rates in rural areas have remained not only much higher than in the cities (Figs. 5, 6) but have been increasing further and at a more rapid speed (Table 3) in Lithuania during the transitional period.

Krūmiņš explained that the presence of higher suicide mortality rates in rural areas is connected with the higher level of alcohol consumption among the rural male population (Krūmiņš, 1993 b).

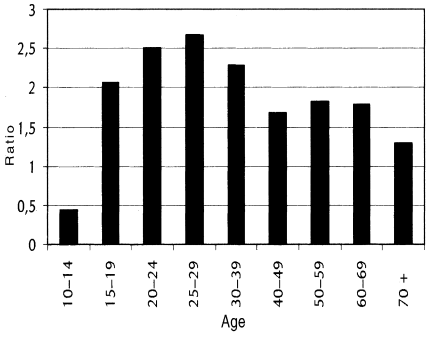
Furthermore, the findings of Kalėdienė and Petrauskienė (1995) indicate that in the 1970s-mid-1980s, alongside the increasing mortality from coronary heart disease (CHD) among urban and rural males and females of Lithuania, the urban-rural differences were also increasing. However, the slowdown of the rise in male mortality from CHD, which had started immediately before the transition, i.e. during the time of the anti-alcohol campaign, continued into the initial stage of the transitional period (1991-1993). In spite of this, differences in mortality from

Figure 4 *Ratios of suicide mortality rates in rural areas to those in urban areas, by age groups, in Latvia, 1991*



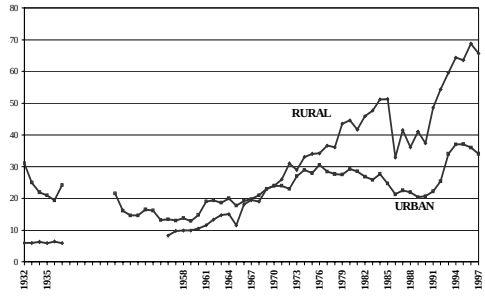
Source: Krūmiņš, 1993

Figure 5 *Ratios of suicide mortality rates in rural areas to those in urban areas, by age groups, in Lithuania, 1996*



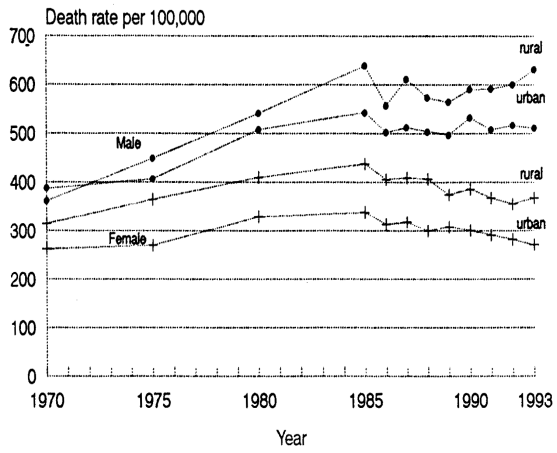
Source: Gailienė, 1998 a

Figure 6 *Suicide rates in urban and rural areas, Lithuania 1932-1997*



Source: Gailienė, 1999 b (forthcoming)

Figure 7 *Age-standardised mortality rates for coronary heart disease by sex and place of residence in Lithuania in 1970-1993*



Source: Kalėdienė et al., 1995

these diseases among urban and rural males were continuing to grow, albeit at a slower rate in Lithuania during the transitional period (Fig. 7). Meanwhile, among women, mortality due to CHD has been declining at much the same rate in both urban and rural areas since the 1980s. Thus, before 1993 urban-rural differences remained similar to those of the pre-transitional period. Regional differences are considerable. In 1991-1993, the regions with the highest CHD mortality were mostly concentrated in the eastern and northern parts of Lithuania (Kalėdienė, Petrauskienė, 1995).

Information regarding regional mortality differences during the transitional period is scanty. On the basis of the 1986-1991 life-tables, Estonian demographers made the conclusion that the variation of life expectancy at birth in the counties of Estonia equalled 3.5 years, which is actually quite a noticeable difference (Katus, Puur, 1997).

A series of life tables that were calculated for the largest cities and all administrative districts in Latvia for the years around the 1989 population census confirmed that there is no correlation between the size of city and life expectancy at birth. However, the tables propose that life expectancy in eastern Latvia continued to be lower than in other parts of the country (Krūmiņš, 1993 a, 1998). The situation was better in the central part of the country. One additional territorial characteristic seems to affect the spatial dispersion of mortality, namely, the distance from the district centre (the main town) to the capital Riga. This feature is not only a purely geographical one but in the current circumstances also a social or even health care characteristic (Krūmiņš, 1998).

According to the calculations made by Petrauskienė and Kalėdienė (1997), the interval of life expectancy at birth variations by district for Lithuanian men comprised 7.4 years for men and 6.8 years for women in 1988-1990 and 8.3 years for men and 6.6 years for women in 1991-1993. However, it should be noted that in order to make a more detailed comment on the data and draw an extensive conclusion, further verification of the calculations is needed.

In the framework of the international research “Health crisis in the Baltic countries” the dispersion of overall mortality and mortality by cause of death (infectious diseases, cancer, cardiovascular diseases, respiratory diseases, other diseases, and external causes of death – traffic accidents, suicides, and homicides) in the period

around the last census of 1989, has been analysed. On the basis of the preliminary findings some conclusions can be drawn[3].

The identification of two very clear, north-south contrasts within the three Baltic countries, one for cardiovascular diseases and the other for respiratory diseases, may be singled out as the most important findings of the research. Whereas, in the case of mortality due to cardiovascular diseases, a clear continuum running from regions of high mortality in the north to low mortality in the south was established, mortality from respiratory diseases varies in exactly the opposite direction. In both cases, Latvia's situation is a transitional one. In the case of cardiovascular diseases, mortality is highest in the regions neighbouring Estonia but decreases as one moves south to the regions that border Lithuania. In the case of mortality due to respiratory diseases, the opposite is true (Krūmiņš, Jasilionis, Stankūnienė, Meslé, Vallin, 1998).

During the research, the importance of taking into account the urban-rural differences in the analysis of regional differences in mortality due to cancer was affirmed. In this case, higher standard mortality ratios were registered in administrative units containing a large urban centre.

Urban-rural differences also have an impact on the regional dispersion of violent deaths (including traffic accidents, suicides, and homicides) (Krūmiņš, Jasilionis, Stankūnienė, Meslé, Vallin, 1998).

4.3. Mortality differences according to marital status

There is very little data on mortality according to marital status available, and particularly few publications of research findings. Only fragmentary illustrations may be obtained from the results of some research. Besides, the available findings concern mostly the initial stage of the transitional period, i.e. the years close to the time of the 1989 census.

It has been observed (Krūmiņš, 1995; Petrauskienė et al., 1995) that in the Baltic countries the regularities of mortality by marital status generally correspond to those in other countries (Hu and Goldman, 1990). According to the 1989 data, life expectancy at birth among married men is considerably longer than among divorced, widowed, and, especially, never married men in Latvia. Among women, this dependency is less evident (Krūmiņš, 1993 a, 1995) (Table 4).

The standardised 1989 mortality rates of the population of Lithuania aged 25 years and over indicate that, compared to married men, the risk of death from cardiovascular disease is 1.8 times higher for single men, 1.3 times higher for divorced men, and 2.1 times higher for widowers. Considerably less difference in mortality rates due to the above disease according to marital status has been observed among women (Petrauskienė, Bierontas, Kalėdienė, 1995).

[3] Preliminary findings were presented at Colloque International de la Rochele in La Rochele in 1998 and at the international conference "Regularities and Inconsistences of Demographic Development", Vilnius, 1998.

Table 4 *Life expectancy by marital status, Latvia 1989*

Age, years	Life expectancy (years)							
	Males				Females			
	Married	Never married	Widowed	Divorced	Married	Never married	Widowed	Divorced
0	67.0	54.1	60.9	61.1	77.0	70.3	75.1	73.4
20	49.0	35.7	42.8	43.0	58.4	51.6	56.4	54.7
40	30.9	19.3	25.4	26.6	39.1	33.7	37.6	36.0
60	15.7	7.4	12.0	14.1	21.6	20.5	20.4	18.5

Source: Krūmiņš, 1995

The analysis of the 1994-1995 suicide rates according to marital status in Lithuania has revealed that considerable differences occur in the frequency of suicides during different periods of life. Men and women who are married or single commit suicide at an older age than widowed or divorced individuals (Kalėdienė, Vilkauskas, Petrauskienė, 1997). The authors note that being married clearly provides reliable protection against suicide.

4.4. Mortality differences according to education

In the Baltics, research on mortality differences according to education have been but marginal due to the lack of information. The research findings from the transitional period are particularly scanty. Furthermore, the available information concerns mostly the very beginning of the transitional period.

The available research data for 1989 show that in the Baltics, just like in other countries, mortality declines as the education level increases (Krūmiņš, 1995; Kalėdienė, 1996). In the case of Lithuania, according to the findings of Kalėdienė (data for 1989), a lower educational level invariably leads to higher mortality for males; the standardised mortality rates for men with primary school and lower education are 1.8 times higher than for men with a higher education. Among women, mortality differences according to education are considerably lower: the difference in mortality rates between the highest and lowest-educated women constitutes 1.3 times (Kalėdienė, 1996).

Information on mortality differences according to economic activity, social status, and occupation is even more inadequate. Besides, it is only valid for the pre-transitional period. Therefore, in this article no reference to it will be made.

4.5. Mortality differences according to ethnicity

Research on mortality differences according to ethnicity is greatly encumbered by the lack of data. Data, both on the ethnicity of deceased people and on the overall ethnic composition of the population, are insufficient. Although there have been few investigations of mortality differences according to ethnicity in the Baltic countries, the available findings suggest one basic conclusion: mortality is slightly higher for the population of the non-titular nationality than for the titular nationality (Krūmiņš, Zvidriņš, Katus, Stankūnienė, 1991).

The available data for the transitional period in Latvia and Estonia indicate that in 1988-1989 life expectancies at birth, at age 5, and at age 15 were lower for Russians in Latvia and Estonia than for the Latvians and Estonians themselves. This particular feature of ethnicity has been characteristic since the end of the 1950s, with some exceptions observed in the 1958-1959 mortality tables both for the male and female populations of Latvia and Estonia (Krūmiņš, Zvidriņš, Katus, Stankūnienė, 1991).

In 1988-1989, life expectancy at birth was 67.3 years for Lithuanian men and 76.6 years for Lithuanian women. The figure for Estonian and Latvian men was about 66 years (Estonians 66.0, Latvians 65.9). Life expectancy for women was between 75 and 76 years (Estonians 75.1, Latvians 75.5). These figures are from almost a year up to two years higher than those for the representatives of other ethnic groups living in the respective republics (Zvidriņš, 1995; Katus, Puur, 1990; Krūmiņš, Zvidriņš et. al., 1991). For non-Estonians in Estonia life expectancy was 65.8 years for males and 73.6 for females. These figures were 59.6 and 69.6 years respectively for Russians in Latvia and 61.5 and 70.2 years respectively for Russians in Lithuania (Zvidriņš, Krūmiņš, 1993).

Some research carried out in Latvia show that this trend has continued into the 1990s. Calculations of age-specific mortality rates for ethnic Latvians and the largest minority, Russians, were performed for 1994-95. The standardised death rates (standard: age composition of the total population of Latvia) were lower for the titular nationality than for the Russians (Table 5). The excess mortality index in 1994-1995 was 117 percent for Russian males, and 114 percent for Russian females (Krūmiņš, 1997).

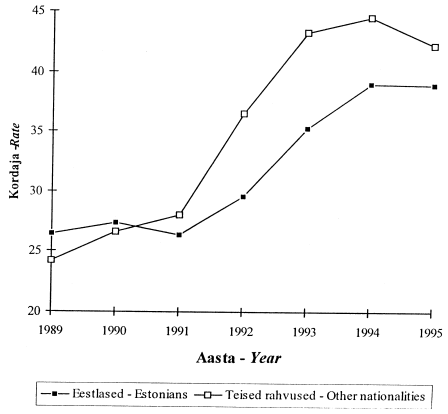
For Estonia, Katus and Puur (1997) observe, however, that irrespective of the existing mortality differences between the two major subgroups of the population – Estonians and non-Estonians – they experience similar changes in their mortality patterns, and these changes occur in a similar time frame. Besides, it has been noted that the differences in life expectancy of all age groups of Estonian and non-Estonian men, which were increasing in 1959-1979, decreased during the 1980s, and became insignificant in 1989 at the beginning of the transitional period. Meanwhile, the differences in life expectancy according to age among Estonian and non-Estonian women were most pronounced in 1989 (Katus, Puur, 1990). For the following period of time, only suicide-specific mortality differences between Estonians and non-Estonians may be obtained. Värnik (1997) found that suicide rates among Estonians were even slightly higher than among non-Estonians at the onset of the transitional period (in 1989 26.4 and 24.3 suicides respectively per 100,000 population; in 1990 27.3 and 26.6 suicides respectively per 100,000 population). In 1991-1994, however, a rapid increase in the suicide rates of non-Estonians (the suicide rates increased about 1.7 times for non-Estonians and 1.5 times for Estonians) made the difference in this respect apparent. The

Table 5 *Age-standardised death rates by two major ethnic groups in Latvia, 1994*

Ethnic groups	Standardised death rates, per thousand	
	Males	Females
Latvians	21.7	10.3
Russians	25.4	11.7

Source: Krūmiņš, 1997

Figure 8 *Suicide rate by nationality, 1979, 1986-1995 in Estonia*



Source: Värnik, 1997

greatest difference was registered in 1994: the suicide rate of non-Estonians exceeded that of Estonians by 14 percent (Fig. 8).

A conclusion using the example of Latvia could be drawn here that a high proportion of the foreign-born population have probably not adapted themselves to the new conditions. Hence, they are at a greater risk of accidental mortality than the population of the titular nationality is (Krūmiņš, 1993 b). Overall, a slightly higher mortality for the population of non-titular nationalities than for titular nationalities might be due to the adaptation difficulties experienced by immigrants (Krūmiņš, Zvidriņš, Katus, Stankūnienė, 1991; Krūmiņš, 1994, 1995).

5 Morbidity and health status

5.1. Morbidity

Research findings on morbidity for the three Baltic states are not numerous. The majority of the publications are about Lithuania. Therefore, this part of the article will be mostly devoted to the findings about Lithuania.

On the basis of the publications of the Health Ministry of the Republic of Lithuania and other national and international works of the medical profession, a conclusion could be made that adult and child morbidity has continued to grow in Lithuania this decade (Kairys, 1998; Usonis, 1998; Lietuva, 1993; Nordic/Baltic, 1998; Health 1997; Mental, 1996). Information in medical literature shows that the incidence of cardiovascular diseases, neoplasms, and alcohol psychoses has been growing in Lithuania. Social diseases have also become more frequent. Throughout the transitional period, more and more new cases of active tuberculosis have been revealed among adults and children (Kairys, 1998; Usonis, 1998). Cases of sexually transmitted diseases have also become more numerous. Preventive examinations of children aged 0-15 revealed that cases of impaired eyesight, scoliosis, and other carriage disorders increased in 1992-1997 (Kairys, 1998). The morbidity situation in the other two Baltic countries is similar (Krūmiņš, 1997; Nordic/Baltic, 1998; Health, 1997; Mental, 1996). During the transitional period in Latvia, as in Lithuania, a decline in general living standards has caused an expansion of social and infectious diseases. More and more cases of salmonella infections, tick-born encephalitis, diphtheria, and other diseases were registered in Latvia during 1990-1995. Tuberculosis has become a very serious

problem. The number of new cases of active tuberculosis during this period almost doubled in Latvia (Krūmiņš, 1997).

Medical investigations have disclosed some age-sex-, residence-, and geographic-related differences of disease prevalence in Lithuania.

The MONICA survey conducted by cardiologists in Kaunas (Lithuania) has revealed a pronounced difference in the attack and incidence rate of strokes between females and males during transition; the incidence of the disease among men is still growing, whereas among women the rates are stable. Among men aged 35-64, the incidence and attack rate (age-standardised) of strokes increased from 227 and 295 respectively per 100,000 population per year in 1986-1989 to 259 and 338 respectively per 100,000 per year in 1990-1993, or by 14 and 15 percent. Among women, no changes have been observed either in the incidence or the attack rate of strokes; incidence was 131 and 129 per 100,000 population during the time periods mentioned above, and the attack rate was 160 for both periods (Rastenytė et al., 1996).

In 1993-1997 cases of active tuberculosis in rural areas of Lithuania grew faster. Since 1993 the prevalence of the disease has been increasingly higher in rural areas than in urban areas: in 1997, there were 75.8 new cases of the disease per 100,000 of urban population and 85.8 per 100,000 of rural population (Lietuvos, 1998). In some localities of Lithuania – the districts of Vilnius (the city of Vilnius excluded), Kelmė, Lazdijai, Jurbarkas, Kretinga, Šilutė, Alytus, and Telšiai – cases of active tuberculosis have reached the epidemic level (over 100 cases of active tuberculosis per 100,000 population in 1997) (Kairys, 1998; Lietuvos, 1998).

In summing up the findings of the Lithuanian Cancer Registry for 1980-1994, one can make an observation about certain geographical differences for cancer. Stomach and skin cancer is more prevalent in western Lithuania but less prevalent in central Lithuania, whereas lung cancer is more of a problem in the districts of central Lithuania (Kėdainiai, Jonava, Radviliškis, Panevėžys), where environmental pollution with nitrogen compounds and solid particles is the greatest in Lithuania. Reverse correlation was established during the analysis of the geographical distribution of stomach cancer and the quantity of magnesium in the soil: stomach cancer incidence was lower in the areas where the concentration of magnesium in the soil and drinking water is higher (Kurtinaitis, Beržanskytė, 1997; Petrauskienė, Kurtinaitis et al., 1997).

5.2. Health status

For the assessment of the health status of the population, alongside the indicators of medical statistics, the findings of surveys on people's own evaluation of their health are also highly important. In most general terms, an observation made in the course of such an analysis is that, irrespective of a higher mortality level, men usually make a better assessment of their health condition than women.

The results of different analyses show that during the first years of the transitional period in the Baltics the health of the population, in their own evaluation, was deteriorating; furthermore, deteriorating to the same extent both for men and women. In the 1992 survey conducted by the Institute of Economics of the Latvian Academy of Sciences, half of the men between 15 and 60 years of age evaluated their health condition as good or very good. According to the NORBALT survey, this figure had decreased to 42 percent by 1994. For women, the figures diminished from 32

percent to 24 percent respectively (Krūminų, 1997). During the 1988 survey conducted in Lithuania[4], health status was evaluated on a five-point scale (from "very good" health at 5 points to "poor" health at one point). According to the data of this survey, in 1988 the average evaluation of health status was 3.68 for males and 3.42 for females (Kanopienė, Čiurlionytė, 1994). According to calculations from the NORBALT Living Conditions survey data[5] (Lithuania, 1996) on health status (assessment made on a five-point scale), at the beginning of the transitional period the health of the Lithuanian population was deteriorating: average health status dropped to 3.31 points for men and to 2.97 points for women. According to the data of the Estonian surveys "Health Behaviour among the Estonian Adult Population"[6] conducted in 1992, 1994, and 1996 (respondents aged 16-64 years were surveyed), the proportion of men who gave their health an assessment of "good" or "reasonably good" was reduced from 38 percent in 1992 to 34 percent in 1994. For women the corresponding figures are 34 percent to 31 percent (Lipand, Kasmel, Tasa et al., 1993, 1995).

The findings of the "Health Behaviour among the Adult Population" surveys conducted in Estonia and Lithuania in 1994 and 1996 show that since the mid-1990s both Estonian men and women have started evaluating their health better, while in Lithuania the evaluation of health status has remained stable[7]. In 1994, 34 percent of Estonian men considered their own health to be "good" or "reasonably good". This figure rose to 39 percent in 1996. For women this figure also increased from 31 percent in 1994 to 36 percent in 1996 (Kasmel, Lipand et al., 1997). For Lithuania, the indicators have in fact remained unchanged: 42 percent for men in both years and 35 and 36 percent for women (Grabauskas, Klumbienė, Petkevičienė, Dregval et al., 1997, 1998).

The survey findings hint at some differences in health status. Although age is a principal health differentiating factor, in the case of Lithuania it has been observed that married people of all age groups make a better self-evaluation of their health status than divorced people do. Single people give the best evaluation to their own health. Education is an obvious health-status-differentiating factor: people with a university education make the best assessment of their health. This is, no doubt, in direct correlation with the differentiation by occupation: office and service employees give their health status the highest points, while agricultural labourers give their health status the lowest points. Besides, the differences are particularly great at a young age. Urban-rural differences in health self-evaluation are not only pronounced, but, as a comparison of the 1994 and 1996 findings show, have also been increasing. In Lithuania, health status differences according to ethnicity show considerable differences between Lithuanians and Russians: Lithuanians make a notably better self-assessment of their health, but this difference is most pronounced in younger age groups. Representatives of other ethnic groups (apart from Russians) in the population of Lithuania were not numerous in the sample. Therefore, the statistical reliability of the data is not high. In conclusion, it could be noted that the above socio-demographic differences in health

[4] The survey was conducted by the Department of Demography of the Institute of Economics of the Lithuanian Academy of Sciences, N=2880, respondents 16-60 years of age.
[5] The survey in Lithuania was conducted in 1994, N=2400, respondents 18 years of age and older.
[6] FINBALT HEALTH MONITOR survey.
[7] In Latvia this survey was launched in 1998 for the first time, and no findings have been published yet.

status and the dynamics between men and women are fairly similar (Grabauskas, Klumbienė, Petkevičienė, Dregval et al., 1997, 1998).

The socio-demographic differences in health status among the population of Estonia is similar to that of Lithuania, but nevertheless bears some differences. In Estonia, marital status as a differentiating factor of health is weaker and dissimilar in its impact. Neither married nor cohabiting people evaluate their health differently than divorced people do, and in the older age groups they evaluate it even worse than divorced people do. Furthermore, there is practically no difference between the evaluations made by Estonians and non-Estonians, and at the ages over 35, Estonian give an even lower evaluation to their health than non-Estonians do (Lipand, Kasmel, Tasa et al., 1995; Kasmel, Lipand et al., 1997).

6 Health-related behaviour

Smoking, alcohol consumption, unbalanced diet, and insufficient physical activity are the leading factors causing the high incidence of chronic non-communicable diseases and high mortality rates. During the transitional period, the amount of research on health-related behaviour has risen considerably, particularly in Estonia and Lithuania. In the Baltics, the most comprehensive research of this kind has been conducted since 1990 in Estonia and since 1994 in Lithuania and is carried out every other year in the framework of the international project FINBALT HEALTH MONITOR. This research provides all-inclusive information on health-related behaviour in these countries. The findings of the surveys enable a thorough analysis of the health status and health-related behaviour differences of various socio-demographic groups of the population to be made. Unfortunately, apart from the research survey data sets that have been published, there are very few analytical publications.

6.1. Smoking

The data of surveys point to considerable differences in smoking habits among the various socio-demographic groups. According to the findings of the international survey “Eurobarometer 87”, which was carried out in 1987, 52 percent of Lithuanian males (N=3320) and 8 percent of females (N=4535) aged 25-64 were smokers (Lietuva, 1993). The data of the FINBALT HEALTH MONITOR 1994 survey show that 43.3 percent of males and 7.4 percent of females (males and females 20-64 years of age, N=3000) in Lithuania were daily smokers. The data from the 1996 survey reveal that 47.3 percent of men and 6.3 percent of women (people aged 20-64, N=3000) were daily smokers (Grabauskas, Klumbienė, Petkevičienė, Dregval et al., 1997, 1998). The findings of the 1987, 1994, and 1996 surveys reveal that there are very big differences in smoking according to sex. In the case of Lithuania, there have been practically no changes in the ratio between male and female smokers over the last 10 years. Women in Lithuania smoke significantly less than men, and they start smoking at a later age. A 1993-1994 survey of Lithuanian schoolchildren (the survey was conducted within the framework of the international programme “Health Behaviour in School-aged Children”; N=5428, schoolchildren aged 11, 13, and 15) showed that 14 percent of 15-year-old boys were already daily smokers. Among girls of this age, 4 percent were daily

smokers (Zaborskis, 1997, 1998). Men mostly smoke at a young age (at the age of 20-44, more than half are daily smokers). Among older men, smokers are considerably less frequent. Age-related dependency in smoking among women is approximately the same. The 1996 survey revealed an increase of smokers among young women of Lithuania, however.

The highest proportion of daily smokers is found among divorcees, both men and women (according to the 1996 data, 62 percent and 16 percent respectively). Men in rural areas are more frequently smokers (in 1996 – 51 percent). Men who have a university education smoke least frequently (34 percent), while those who have not completed secondary school are most frequently smokers (52 percent). Men employed in agriculture, industry, and construction smoke more than men who work in offices or in the service sphere. Among women, the latter three dependencies are not pronounced. Ethnic Russians, both men and women, smoke slightly more frequently (Grabauskas, Klumbienė, Petkevičienė, Dregval et al., 1997, 1998).

In Estonia, smoking patterns according to the socio-demographic differences of smokers are similar to those in Lithuania. The most obvious difference is seen in the proportion of women who are daily smokers. Whereas in Lithuania and Estonia the proportion of men who are daily smokers is similar, in Estonia the proportion of women who smoke is considerably higher (Figure 9, 10). Comparing the results of the FINBALT HEALTH MONITOR surveys conducted in Estonia in 1990 (N=1085, ages 18-55+) and in 1996 (N=1507, ages 16-64) (Lipand, Kasmel et al. 1992; Kasmel, Lipand et al. 1997) demonstrates that in 1990 and 1996 the proportion of men who were daily smokers was nearly the same (45.2 percent and 47.5 percent respectively), whereas among women this proportion rose markedly during the transition (from 15.1 percent to 21.7 percent). Most daily smokers are men and women aged 25-34 (more than half of men, nearly one third of women). Just like in Lithuania, Estonian agricultural and industrial workers, individuals with a lower education, and non-Estonians smoke most frequently (Lipand, Kasmel, et al., 1992, 1993, 1995; Kasmel, Lipand et al., 1997).

6.2. Alcohol consumption[8]

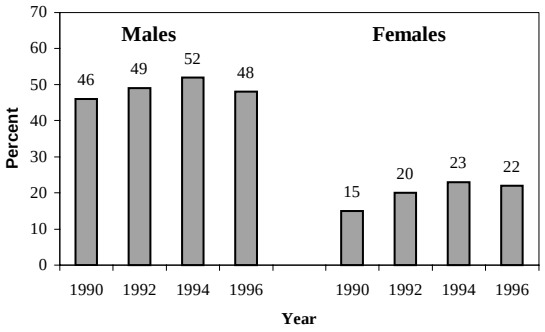
Concerning the consumption of alcohol, certain socio-demographic differences can be seen. The findings of the FINBALT HEALTH MONITOR surveys show that the main difference in alcohol consumption in Lithuania and Estonia is the one according to sex. On the basis of the criterion used in these surveys for the estimation of the alcohol consumption level – the proportion of people who drink strong alcohol or liquor once a week or more frequently – it can be firmly stated that a considerably higher proportion of men than women use strong alcoholic drinks frequently. Besides, in 1990-1996, the difference between the men and women of Estonia was growing further, due to a more rapidly increasing number of men afflicted by this drinking pattern (the greatest increase was observed in 1992-1994).

[8] The parts “Alcohol consumption” and “Diet” were prepared using the FINBALT HEALTH MONITOR survey data published by Grabauskas, Klumbienė, Petkevičienė, Dregval et al., 1997, 1998; Lipand, Kasmel et al., 1992, 1993, 1995; Kasmel, Lipand et al., 1997.

Age- and sex-specific consumption of alcohol, both in Lithuania and Estonia, is the most pronounced among men 35-44 years of age. Among women, no significant differences according to age group have been observed. However, for a slightly larger proportion of women of this age, the indicated drinking pattern is characteristic as well.

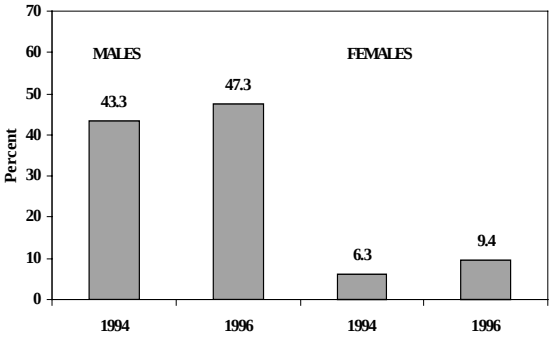
In the case of Lithuania, the above survey has not revealed an expressed difference in alcohol consumption according to urban/rural residence. In Estonia it was noticed that at the beginning of the transitional period (1990 and 1992) alcohol abuse was more typical of the male population of rural areas and small towns, while in the mid-1990s (1994 and 1996) it was more common for males in the major towns and cities. According to the findings of all four health behaviour surveys, the proportion of women consuming alcohol is larger in Estonian cities than elsewhere.

Figure 9 *Percent of daily smokers by sex in the adult population of Estonia, 1990-1996*



Source: Kasmel, Lipand et al., 1997

Figure 10 *Proportion of daily smokers by sex in the adult population (aged 20-64) of Lithuania, 1994-1996*



Source: Grabauskas, Klumbienė, Petkevičienė, Dregval et al., 1998

The surveys also show that in Lithuania and Estonia divorced males dominate the group of people who consume strong alcohol or liqueur once a week or more frequently. Among females, no expressed correlation between marital status and alcohol consumption has been noticed.

In Lithuania, differences in alcohol consumption according to education are obvious both among men and women: the above pattern of alcohol consumption is in inverse proportion with the level of education. In Estonia the situation changed between 1990 and 1996. At the beginning of the period, the aforementioned alcohol consumption pattern was mostly attributable to the men with the lowest level of education. Later, according to the 1994 and 1996 survey findings, it was mostly found among graduates

of universities and professional colleges. Regarding women in Estonia, the percentage who consume alcohol is highest among vocational school graduates.

In Lithuania, ethnicity-specific dependency is a feature of Polish males and Russian females, among whom the proportion of individuals drinking strong alcohol or liquor once per week or more frequently is higher than among Lithuanians or representatives of other ethnic groups. Meanwhile in Estonia, differences in alcohol use between Estonians and non-Estonians are insignificant.

6.3. Diet

The dietary aspects of the population of Lithuania and Estonia that influence public health and the indicators of cause-specific mortality are revealed in the FINBALT HEALTH MONITOR surveys. Factors such as the use of vegetable oil for cooking and the consumption of skimmed and low-fat milk are known to be beneficial to health, while the use of lard (animal fat) for cooking and the consumption of whole milk can have an adverse affect on health.

Although the 1996 survey findings show that the majority of the population of Lithuania and Estonia use vegetable oil for cooking, its use is more widespread in Estonia.

Among younger-people, vegetable oil is most frequently used for cooking. In Lithuania, vegetable oil is mostly used by urban residents (in Estonia this has not been noticed). In both countries it is clearly seen that vegetable fat is mostly used for cooking by people with higher education. In Lithuania: the majority of men and women in rural areas use lard and consume whole milk, while urban residents and people with higher education use the aforementioned products least frequently. In Estonia, lard is used considerably less for cooking than in Lithuania. The daily use of skimmed or low-fat milk is not widely spread, particularly in Lithuania.

7 Conclusions

Mortality changes taking place in the three Baltic countries during the transitional period require all-inclusive investigation. In order to understand the nature of fluctuating and contradictory mortality trends, research into the socio-demographic differences of mortality, morbidity, and health-related behaviour is vitally important.

A lack of extensive information and reliable data is the main factor that encumbers investigations. Despite this, however, the urgency of the mortality-related problem in the three Baltic countries has spurred a growing interest in the theme. International co-operation in the research into mortality has been increasing. Different health-related surveys, among which the comparative survey FINBALT HEALTH MONITOR stands out for its all-inclusive character, have expanded significantly.

The findings of research conducted on mortality, morbidity, and health behaviour in the three Baltic countries during the transitional period enable some conclusion on the trends, patterns, and differences of these phenomena to be drawn.

The basic and most important feature of the mortality pattern of the transitional period is the fact that it is in essence a continuum of the pattern formed during the Soviet period. This is overtly demonstrated by the age- and sex-specific mortality

differences: first, very large differences in male and female mortality that became even more pronounced at the beginning of transition; second, divergent age-specific mortality trends (differences in child and adult mortality trends). During the initial stage of transition, the mortality of young- and middle-aged men greatly increased, whereas, irrespective of a changed infant mortality definition that boosted the indicators of the early 1990s, child mortality took a downward trend.

Although the data on mortality differences according to marital status are incomplete and even fragmentary, they indicate, nevertheless, that similarly to other countries, the mortality rate for married men in the Baltic countries (research findings are available for Latvia and Lithuania) is considerable lower and life expectancy is longer than for men that have some other marital status. Among women, this dependency is not clearly expressed.

In all three Baltic countries, mortality in rural areas is higher than in urban areas. During the transition, however, changes in urban-rural mortality differences have been of varying degrees in the three countries. In Lithuania, urban-rural mortality differences have been steadily growing due to the more rapidly increasing mortality in rural areas. During the transitional period of Estonia, urban-rural mortality differences have been maintained and the trend for both the rural and the urban populations follows a similar pattern. In Latvia, regardless of a continuously higher rural mortality, the increase of mortality in urban areas, in contrast to the trends observed before transition, have been more radical than in the rural areas.

Analogous changes have been observed in suicide trends. During transition suicide rates in Estonia and Latvia have been growing more rapidly in urban areas. In Lithuania suicide rates have been proceeding according to the previous trend, i.e. they are growing more rapidly in rural areas. Regardless of the growing differences in urban-rural suicide rates in the Baltic countries, the suicide rates in rural areas remain considerably higher than in the cities.

Although research findings on mortality differences according to education in the Baltic countries are inadequate, still, one basic conclusion can be made: the higher the education level is, the lower mortality rates and the longer life expectancy are.

In all Baltic countries, mortality among the population of the titular ethnicity is lower than among non-titular ethnicities, notably Russians. Possibly, this is one of the main reasons why the mortality level in Lithuania, with the most ethnically homogenous population, is lower and increased less during the period of political strain when the Baltic countries were regaining independence and consolidating their statehood in the early 1990s.

The findings of medical statistics indicate the increasing morbidity of the population during transition. The number of social disorders has been growing. Furthermore, at the beginning of the transitional period, the inhabitants of all the Baltic countries made a lower assessment of their health status. However, the population of Estonia have been making a more positive assessment of their health since the mid-1990s. For Lithuania, the figures relating to the population's self-perceived health status have remained fairly stable. The findings for similar indicators for Latvia during the mid-1990s are unavailable.

Research in Lithuania and Estonia demonstrate that regardless of higher male mortality, men make a better assessment of their health than women do. Individuals

with a university education, people employed in offices and the service industry, and residents of urban areas give a better assessment to their own health status. Furthermore, during transition urban-rural differences in health status have increased further. The aforementioned health status differences according to social groups are similar for both men and women.

Apart from these changes in health status that are nearly identical for both countries, some differences between Lithuania and Estonia have become apparent. In Lithuania, representatives of the titular nationality make a considerably better assessment of their health than members of ethnic minorities. In Estonia, differences in health status according to ethnicity are not expressed. Furthermore, the dependency of health on marital status is fairly different between Lithuania and Estonia: married people in Lithuania, particularly men, make a better assessment of their own health than the divorced; in Estonia, both married couples and people who cohabit make a similar assessment of their health status as divorced people.

The findings of the FINBALT HEALTH MONITOR and other health-related surveys reveal enormous differences between the proportions of males and females who are daily smokers. This difference is particularly large in Lithuania. Nearly half of the males in Estonia and Lithuania are daily smokers. In Estonia, considerably more women are daily smokers, and their number has constantly been growing, comprising over one fifth of all women. In Lithuania less than one woman in ten is a daily smoker, although more young women have started smoking recently. Most daily smokers are divorcees (both men and women), men with a lower level of education, agricultural, industrial, construction workers, and representatives of non-titular nationalities.

The most striking socio-demographic difference in alcohol consumption is the clear numerical superiority of male drinkers of strong alcohol. Among men, this pattern of alcohol consumption is most typical at the ages 35-44 and for the divorced. During transition, the urban-rural differences in alcohol consumption in Estonia and Lithuania have been divergent and rather contradictory. Therefore, a more thorough examination of non-behavioural factors would be expedient here. During transition, contradictory trends in alcohol use have also been observed between people with different educational levels.

The findings of the FINBALT HEALTH MONITOR survey show that the diets of the populations both in Lithuania and Estonia are rather irrational. This is particularly true of the rural inhabitants of Lithuania. However a trend towards an improvement in the situation has been registered: the diets of young people, residents of urban areas and of those with a higher level of education have become more rational (more people in this category consume skimmed milk, use vegetable oil for cooking, and fewer people use whole milk and lard for cooking).

In conclusion, it could be argued that the research findings have revealed considerable socio-demographic differences in mortality, morbidity, and health behaviour in all three Baltic states. Furthermore, the findings that disclose the relationship of the differences between health behaviour and mortality give an impetus for further investigations that could throw some light on the presence of a specific mortality pattern in the post-Soviet region, the Baltic states included.

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MIRTINGUMO, SERGAMUMO IR GYVENSENOS SOCIALINIAI SKIRTUMAI PERĖJIMO Į RINKOS EKONOMIKĄ SĄLYGOMIS: TRIJŲ BALTIJOS ŠALIŲ TYRIMAI

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Reziumė

Atgavus nepriklausomybę ir atsiradus galimybėms be apribojimų naudoti ir skelbti mirtingumo duomenis, visose Baltijos šalyse labai suintensyvėjo mirtingumo bei sveikos gyvensenos tyrimai, jų skelbiami rezultatai. Tačiau daug šio laikotarpio mirtingumo tyrimų yra retrospektyviniai, o publikacijos nelygiavertės savo kokybe ir tyrimų gilumu.

Svarbiausias šio laikotarpio mirtingumo pokyčių tyrimų rezultatas - identifikuotas mirtingumo modelio, pradėjusio reikštis septintojo dešimtmečio viduryje, tęstinumas. Esminiai jo požymiai: dideli skirtumai tarp vyrų ir moterų mirtingumo; priešingos vaikų ir suaugusių mirtingumo tendencijos (vaikų mirtingumo mažėjimas, suaugusių didėjimas).

Tyrimų rezultatai atskleidžia mirtingumo rodiklių priklausomybę nuo vedybinio statuso, išsimokslinimo, tautybės, gyvenamos vietos:

- vedusių vyrų mirtingumo rodikliai mažesni nei viengungių, išsiskyrusių ar našlių; tarp moterų ši priklausomybė nepastebėta;
- kuo aukštesnis išsimokslinimas, tuo mažesni mirtingumo rodikliai;
- visose trijose Baltijos šalyse pagrindinės tautybės gyventojų mirtingumas mažesnis nei nacionalinių mažumų gyventojų;
- kaimo gyventojų mirtingumas didesnis nei miesto gyventojų.

Tyrimo rezultatai, subjektyvaus vertinimo būdu apibūdinantys gyventojų sveikatos būklę Lietuvoje,ir Estijoje, parodė, kad:

- Lietuvoje vedę (vyrai ir moterys) geriau vertina savo sveikatą nei išsiskyrę, tuo tarpu Estijoje tokia priklausomybė nepastebėta;
- žmonės su aukštuoju išsilavinimu savo sveikatą vertina geriau (ir Lietuvoje, ir Estijoje);
- Lietuvoje lietuviai gerokai geriau vertina savo sveikatą nei kitų tautybių gyventojai, o Estijoje atvirkščiai – būtent estai savo sveikatą vertina blogiausiai, lyginant su kitais šalies gyventojais;
- kaimo gyventojai savo sveikatą vertina gerokai blogiau nei miestiečiai.

Straipsnyje apibūdinti ir socialiniai demografiniai gyvensenos, susietos su sveikata, skirtumai. Šio pobūdžio tyrimai dešimtajame dešimtmetyje buvo atlikti Lietuvoje ir Estijoje.