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**AGEING AND HEALTH IN THE TRANSITION  
COUNTRIES OF EUROPE – THE CASE OF  
HUNGARY**

by  
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# 1 Background<sup>1</sup>

Within less than one hundred years during the 20<sup>th</sup> century, the *transition countries of Europe*<sup>2</sup> – as they are labelled today – experienced two radical social transformations. The communist take-over was the first which reached them at various points of time between 1917 and 1949. The period of communism lasted about 70 years for the first member-republics of the Soviet Union<sup>3</sup> and about 40–50 years in other transition countries. The second, more recent, turbulence happened as a surprise, almost the same years, around 1989–1991. The totalitarian regimes collapsed in a split second of human history. Their surviving peoples (re)gained political independence and were staggered to witness a less traumatic though painful exercise: establishing new, democratic institutions and transforming the command economies into market economies.

From a global perspective it is certainly justified to identify these countries as a distinct group. They formed a consolidated ideological, political, economic and (partly) military system, isolated from the *free capitalist Europe* by the *iron curtain*<sup>4</sup>. But beyond the curtain, despite all efforts for homogenisation, the extremely diverse climatic and geographical conditions, deep historical roots, complex cultures, numerous languages, ethnicities, religions, a wide range of local practices in production, distribution, consumption, teaching and healing etc. have all left their imprints, now openly and widely perceptible, also in demographic

<sup>1</sup> This research was supported by the UN Population Division. An earlier version of the present paper has been published in the Proceedings of the United Nations Expert Group Meeting on Social and Economic Implications of Changing Population Age Structures, Mexico City, 31 August–2 September 2005, pp. 221–251.

[http://www.un.org/esa/population/meetings/Proceedings\\_EGM\\_Mex\\_2005/darozci.pdf](http://www.un.org/esa/population/meetings/Proceedings_EGM_Mex_2005/darozci.pdf) (sic!)

<sup>2</sup> The group of transition countries of Europe includes the following states (in alphabetical order):

	Country	ISO2		Country	ISO2
1	Albania	AL	15	Lithuania	LT
2	Armenia	AM	16	Poland	PL
3	Azerbaijan	AZ	17	Republic of Moldova	MD
4	Belarus	BY	18	Romania	RO
5	Bosnia and Herzegovina	BA	19	Russian Federation	RU
6	Bulgaria	BG	20	Serbia and Montenegro	YU
7	Croatia	HR	21	Slovakia	SK
8	Czech Republic	CZ	22	Slovenia	SI
9	Estonia	EE	23	Tajikistan	TJ
10	Georgia	GE	24	The former Yugoslav Republic of Macedonia	MK
11	Hungary	HU	25	Turkmenistan	TM
12	Kazakhstan	KZ	26	Ukraine	UA
13	Kyrgyzstan	KG	27	Uzbekistan	UZ
14	Latvia	LV			

<sup>3</sup> The Soviet Union was established in 1922, first as a Federation of Soviet Russia, Soviet Ukraine, Soviet Belarus, and the Soviet Transcaucasian Republic (made of Azerbaijan, Georgia and Armenia each of which obtained Soviet Socialist Republic status in 1936). In 1924 Soviet Turkmenistan and Soviet Uzbekistan, in 1929 Soviet Tajikistan joined the Soviet Union. After the Russian–Finnish War of 1939–1940, the Soviet Union seized the greater part of Finnish Karelia, invaded and annexed Lithuania, Latvia and Estonia, took possession of parts of Romania where the Moldavian Soviet Socialist Republic was created. Source: *Magyar Nagylexikon (Hungarian Great Lexicon)*, Vol. 16. Budapest: Magyar Nagylexikon Kiadó, 2003: 904–07.

<sup>4</sup> “From Stettin in the Baltic to Trieste in the Adriatic an iron curtain has descended across the Continent.” W.S. Churchill’s speech at Westminster College, Fulton, Missouri, March 5, 1946. The ‘iron curtain’ previously had been applied by others to the Soviet Union or her sphere of influence, e.g. Ethel Snowden *Through Bolshevik Russia* (1920), Dr Goebbels *Das Reich* (25 February 1945). Source: *The Oxford Dictionary of QUOTATIONS*, The Oxford Pop-up English Language Reference Shelf on CD-ROM. Oxford University Press, 2000.

behaviour, family and community life. Simultaneity in the second change of political regimes did not mean uniform characteristics or consequences either. Pre-communist differences, varying political experience in the state-socialist period, the strictness of the borders, as well as other national characteristics coloured the picture.<sup>5</sup>

It is therefore not surprising that features and stages of the (first) demographic transition have been largely diverse within the 'group of 27' transition countries. Fertility decrease has been common but there has been much variety in the timing, the length and the speed of decline. In 2003, levels of total fertility rates ranged between 3,0 and 1,1 (Tajikistan versus Armenia, Bulgaria, Latvia, Russia, and Slovenia) while life expectancies at birth ranged between 56 and 73 years in the male population (Kazakhstan and Turkmenistan versus Slovenia) or between 63 and 81 years among females (Tajikistan versus Slovenia) in 2002 (WHOSIS data). During the second half of the last century, increases in life expectancies at birth were almost exclusively gained by improving infant and child mortality and by controlling infectious diseases. For about 30 years between the late 1960s and 1990s, hardly any improvements were achieved in the life expectancies of adults. Poor and even worsening survival probabilities of the middle aged (particularly males) during the 1970s and 1980s and further drops following the change of political systems have been extensively, though belatedly, documented – largely from the 1990s (among others by Watson 1995, Bobak and Marmot 1996; Velkova, Wollesswinkel-van den Bosch and Mackenbach 1997; Carlson 1998; Marmot and Bobak 2000; McKee and Shkolnikov 2001; Meslé 2002; EC and WHO 2002; Nolte, McKee and Gilmore 2004). No particular attention has been paid, however, to the health of the elderly living in Central and Eastern Europe. International comparative studies focusing on the health of the elderly seldom included ex-communist countries and studies concentrating on health in transition countries did not show much interest in the aged population (see for example: Caselli and Lopez 1996; Arnaudova and Charpak 2004). Longevity is a relatively new component of demographic ageing in transition countries. Recent improvements in life expectancies at higher ages gave a new impetus to the ageing process which had been set in motion by fertility decline, starting several decades, or even a century earlier.

Demographic ageing is a tremendous challenge all over the world. Emerging new tasks and tensions thereof are particularly difficult to manage in countries which have – at least by European standards – modest means. Their relatively weak economic bases were further eroded during the critical years of transition. Masses of people who had been used to low but acceptable living standards had to count every penny to cover day-to-day expenses or were overwhelmed by the problems they had to face. Their situation has been aggravated by the fact that not only the former political

<sup>5</sup> “The same social transformations have been registered in the whole post-communist world, however, we think, that the post-communist transformations of social institutions in the countries of the former ‘socialistic camp’ differ from the post-soviet ones. ... Lastly, only in the post-soviet states of the whole post-communist world (apart from Baltic countries), all generations had almost no experience of social life under political democracy and market economy. Therefore the social integration and stability maintained in Poland, Hungary, Czech Republic and other countries of ‘late communisation’, have other institutional foundations than in Russia and Ukraine, which made it possible for them to perform quick and effective ‘shock therapy’ and achieve positive socio-economic results, while economies of post-soviet states collapsed and political life was characterised by the [communist] restoration processes that developed rapidly.” (Golovakha–Panina 2003: 24–25.)

regimes and the economies collapsed but the all-embracing social and medical systems have also crumbled. The prodigious job of creating a new, acceptable, professionally and economically efficient, social security and health system is ahead of these countries (see for example: Arnaudova and Charpak 2004; Figueras, McKee, Cain and Lessof 2004).

## 2 Objectives, Methods and Data

The purpose of the present review is twofold. The first is to describe the state of the art in studies on population ageing and health at higher ages in selected European countries in a cross-national perspective. Ten transition countries and three non-transition countries of Europe are included in the comparison. The selection was not random. From among the ex-communist countries Estonia (EE), Latvia (LV), Lithuania (LT), Poland (PL), the Czech Republic (CZ), Slovakia (SK), Hungary (HU), Slovenia (SI), Romania (RO), and Bulgaria (BG) have been chosen applying the principle of the 'closest neighbour'. These countries (listed from North to South and from West to East) cover a contiguous area stretching from the Baltic to the Adriatic and the Black sea, and share similar historical and cultural heritage. Their transition from socialism to capitalism was peaceful and – with the exception of Romania – bloodless. Their economies have more or less recovered from the deep crises experienced after the collapse of state-socialism. From the point of view of demographic transition, they form a relatively homogeneous group in contrast to most East European or Central Asian post-soviet republics. The selection of three non-transition countries: Finland (FI), Austria (AT) and Portugal (PT) followed similar lines of reasoning. Both Finland and Austria are immediate neighbours, historical, cultural and economic partners of at least one transition country. Portugal represents a 'virtual closest neighbour' with regard to the post-war levels of economic development, her enclosure and isolation in the fascist era, and belated improvements in mortality.

Data used for cross-national comparison have been taken from two international databases. One major source was the Council of Europe's demographic yearbook (*Recent demographic developments in Europe*), also available on CD. The other, very rich, source of information accumulated by the World Health Organisation Regional Office for Europe (*European Health for all database, Mortality by leading causes of death, sex and age*) could be accessed online ([www.euro.who.int](http://www.euro.who.int)).

The complexity of the notion of health, however, does not lend itself to straightforward statistical description. There are two direct ways of approaching it. One is evaluating subjective or perceived health by collecting people's opinion of their own well-being. The other is an objective picture gained by measuring various health indicators: physical, mental, functional, etc. parameters. Both methods require standardised surveys when international comparison is aimed at. The second-best approach is an indirect one. In this case not health itself is qualified, but the lack of certain 'elements of health', and thereby a morbid state is ascertained. Such data are commonly collected within the health sector. This information is not representative of the total population, since only those are covered who attend a physician or use some medical services. The

elaboration of internationally comparable morbidity indicators is an ongoing process the fruits of which cannot yet be harvested. As a last resort, public health can be characterised by consolidated mortality statistics, which are available in the above-mentioned international databases.

Due to these constraints, our cross-national comparative review had to be restricted to the presentation of

- demographic ageing;
- underlying fertility and mortality trends;
- total and healthy life expectancies at birth and at age 60;
- selected causes of death at age 65 and above.

The *second purpose of the paper* is to provide a comprehensive picture of the health status of the elderly population in Hungary. This country had gone through a deep and dragging epidemiological crisis beginning in the mid 1960s (Daróczy 1988, 2000, 2003 and Józán 1994, 2001). It was only three decades later that a slow and continuous progress could be noticed in both female and male life expectancies. The question to be answered is the following: to what extent and in what ways have the epidemiological crisis and subsequent improvements affected the elderly?

Detailed Hungarian data are taken from national sources. Most of them are regularly collected and published by the Hungarian Central Statistical Office, like census data, vital events and indicators, while others are provided by outpatient and inpatient services, dispensaries, registers of specific diseases, etc.

Besides regular statistics, relevant results of two recent surveys will also be incorporated. The first is the *National Health Interview Survey (NHIS)*, a series of cross sectional data collection launched in 2000 and repeated in 2003. Both samples included 7,000 individuals representing Hungarian non-institutionalized population aged 18 and over. *NHIS* is included in the National Public Health Program of the Hungarian Ministry of Health. Surveys have been conducted under the supervision of Béla Johan National Centre for Epidemiology ([www.oek.hu](http://www.oek.hu)).

The second sample survey is the *Hungarian Generation and Gender Survey (HGGS)* a follow-up survey, named *Turning Points of the Life-Course*, initiated and co-ordinated by the Demographic Research Institute (DRI) of the Hungarian Central Statistical Office ([www.dpa.demografia.hu](http://www.dpa.demografia.hu)). The first wave of *HGGS* survey took place during November–February 2001/2002 on a sample of more than 16,000 individuals representing Hungarian non-institutionalized population aged 18–74 at the time of the first wave. The second wave followed in the winter months of 2004/2005. This program forms part of the international *Generations and Gender Program (GGP)*.

None of the above surveys focuses explicitly on the elderly, and only the first is actually a health survey. Nevertheless, the results available by broad age categories give some insight into the health status of Hungarian women and men over the age of 60 or 65.



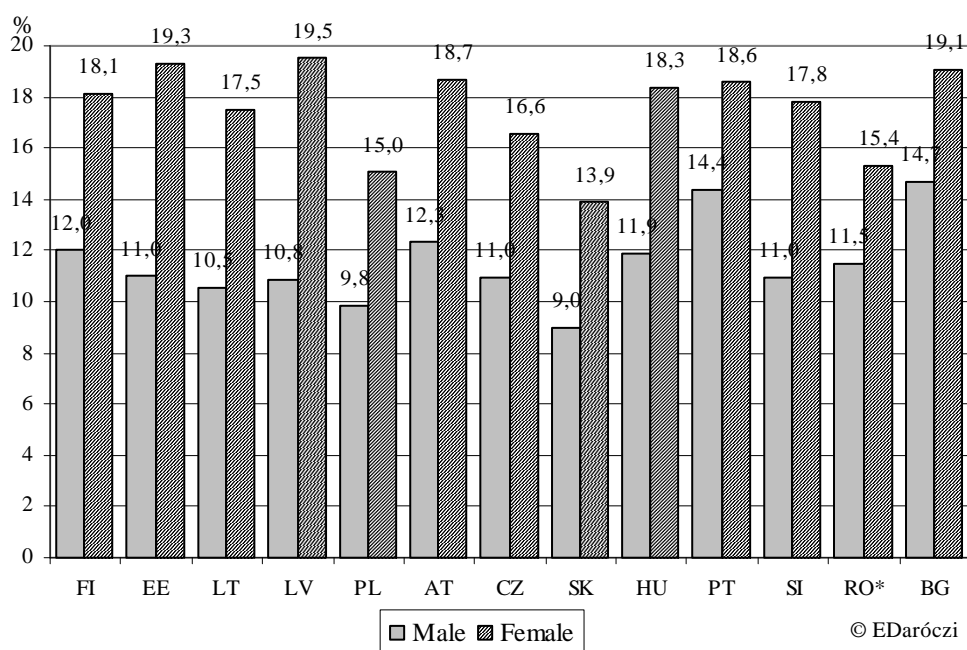
### 3 Age Composition in a Comparative Perspective

#### Single Ageing

The population of each country included in our review portrays a rather old age composition as of January 1, 2002. The proportion of women aged 65 and over varies between 14 and 20 percent and similar ratios for the male population are found between 9 and 15 percent. In this respect there are no 'system-specific' differences between transition and non-transition countries: both the youngest and the oldest age structures appear in post-communist states. Slovakia has far the smallest proportion of both elderly women and men, while the largest shares of people aged 65 and over can be found in Bulgaria among men and in Latvia among women – closely followed by Estonia and Bulgaria. There is less variation in the percentages of elderly population among Austria, Finland, and Portugal. Their typical proportion of people aged 65+ is between 18–19% in women and around 12% in men, though Portugal stands out with a high male ratio of 14.4% (Figure 1).

Percentages of population aged 65+ can give rudimentary information on demographic ageing. They primarily reflect the combined results of fertility levels during the past hundred years and the survival probabilities within the 0–64 age brackets. Longevity or old age mortality has little influence on these figures. Available time series of total fertility rates and life expectancies at birth are too short – covering merely forty years between 1960 and 2001 – for assessing the contributions of changing fertility and mortality levels to the present state of ageing. Nevertheless, the initial and varying order of countries by these indicators over time, and distances among them are illuminating (Figure 2).

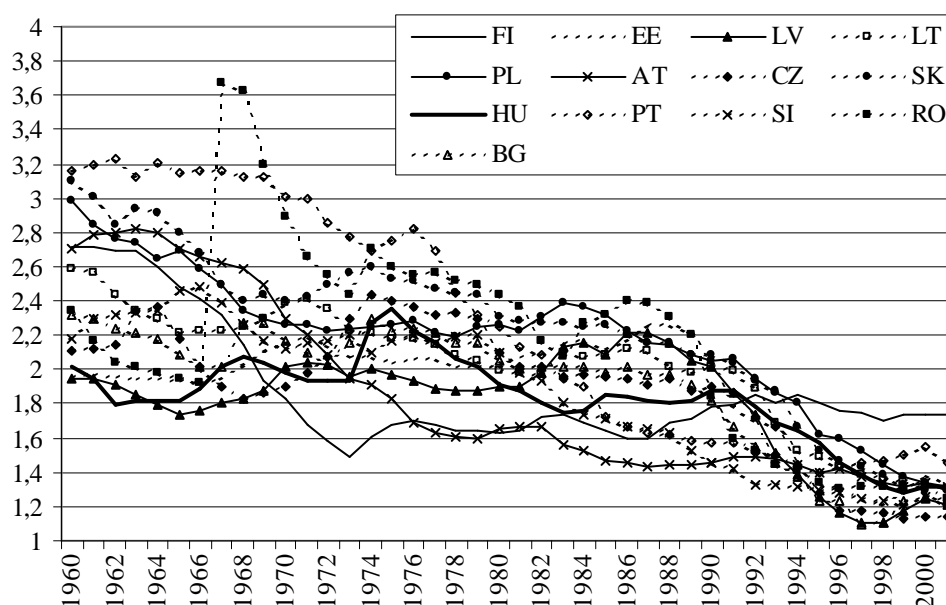
Figure 1  
*Population Aged 65+ within the Male and Female Population  
January 1, 2002*



\*January 1, 2001

Data from Recent Demographic Developments 2002, Council of Europe.

Figure 2  
Total Fertility Rates, 1960–2001



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Data from Recent Demographic Developments 2002, Council of Europe.

There were significant differences in total fertility rates among countries at the beginning of the 40 year period which had been, for the most part, established much earlier (Andorka 1978; Tekse 2005 reprint). Past fertility levels are reflected in the present proportions of women aged 65+. There is a clear correlation, for example, between TFRs in 1960 and the shares of elderly women in 2002 ( $R = -0.48$ ). In 1960 fertility was just at, or below replacement level (2.1) in the present states of Latvia, Estonia, Hungary and the Czech Republic, and the same countries, except for the Czech Republic, had the largest share of elderly women in 2002. As for men, the correlation between fertility and ageing is less salient because male probabilities of dying are higher and vary more among countries than female mortality rates do.

Within the mainstream downward secular trends of fertility, there are periodic, mild fluctuations, as well as some pikes and dikes (Figure 2). Steep upward changes in transition countries indicate the impacts of either direct or indirect pro-natalist state interventions. Rigorous ban on abortion and contraceptives in Romania (1967–1968, 1973, 1986), and pro-natalist financial incentives in Hungary (around 1968 and 1973, 1986) resulted in sudden rises in the number of births.<sup>6</sup> But these regulations could only produce transient increases in the values of period fertility. Completed fertility levels have remained almost untouched. Resultant dramatic changes in the number of subsequent newborn generations, however, have long-term repercussions, which are going to manifest themselves vividly when ‘pike’ cohorts enter retirement age.

<sup>6</sup> Transition countries did not experience post-war baby booms. This was one of the reasons why pro-natalist policies were widely applied. In 1953 Hungary introduced strict anti-abortion regulations, which resulted in an increased number of births, ‘the Ratkó children’ – named after Anna Ratkó, minister of health of the time – in 1954–1955. These regulations were practically abolished in 1956.

By the end of the 20<sup>th</sup> century, cross-country variations became much smaller in fertility levels. Convergence was largely due to general changes in norms and values (referred to as the second demographic transition) and partly to the negative impacts of political and economic crises on births in transition countries. Total fertility rates in Finland, Austria and Portugal were almost the same in 2001 as in 1988, while there were significant drops in each post-communist country included in this review. The smallest post-transition change in the TFR occurred in Slovenia (0.42 less children per woman), the largest in Romania (a drop of more than one child per woman). In 2001 only Finland and Portugal had a total fertility rate around, or over 1.50 children per women. The other countries ranked between 1.14 (Czech Republic) and 1.34 (Estonia), just above, or well under the acknowledged limit for the lowest low fertility (1.30).

The *present* old-age ‘burden’ can be assessed by referring to the first column of dependency ratios displayed below (Table 1). Only Slovakia and Poland have a ratio of population aged 65+ over population aged 15–64 well under 20% while seven countries have ratios above 22%, with Portugal and Bulgaria close to one quarter. Expected *forthcoming* changes in old-age dependency are shown by the ratios of those entering old age (60–64) related to the group which enters active age (15–19)<sup>7</sup>. Besides dissimilar national mortality levels, these figures are also affected by different sizes of cohorts born in 1938–1942 and 1983–1987. The combined results of these factors vary extensively from country to country. The Baltic states and Slovenia seem to experience little progression in ageing during the first years of the 21<sup>st</sup> century. Ageing on the long run (indicated by the dependency ratio of elderly over children in the third column) would become particularly swift in Portugal and Bulgaria, while Slovakia and Poland are going to experience a much slower change in age composition.

Table 1  
*Dependency Ratios, % January 1, 2002*  
(countries are listed in increasing order of their respective ratios)

65+ per 15–64		60–64 per 15–19		65+ per 0–14	
SK	16.49	LV	49.62	SK	60.16
PL	18.04	FI	49.81	PL	68.84
RO*	19.63	EE	67.26	RO*	74.54
CZ	19.68	LT	72.61	LT	75.08
SI	20.63	SI	74.16	FI	84.52
LT	21.34	RO*	78.10	CZ	87.04
HU	22.29	BG	79.08	EE	90.10
FI	22.65	CZ	80.70	LV	93.19
LV	22.87	SK	80.89	HU	93.48
AT	22.91	PT	81.08	SI	94.08
EE	22.99	PL	82.36	AT	94.90
PT	24.49	AT	83.25	PT	103.64
BG	24.85	HU	99.89	BG	113.05

\* January 1, 2001

Source: Recent Demographic Developments 2002, Council of Europe.

Since the present proportion of elderly (defined as the age group 65+) is largely dependent on the relative size of previous birth cohorts, it is not too

**Double  
Ageing**

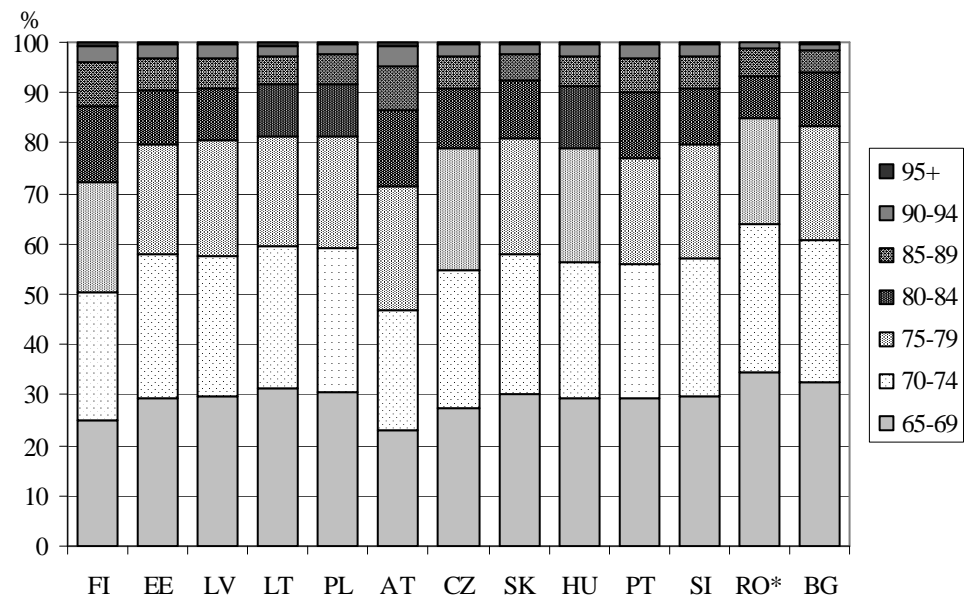
<sup>7</sup> With regard to increasing duration of education, it would seem more reasonable to calculate with the 20–24 or the 25–29 age groups.

informative of longevity. The internal age composition of the group of elderly is gaining increasing importance since dependency – in a real sense – involves the need for care or support in daily living. The age, from which a person needs help, is shifting upward. This is fortunate both for the individual and the community because the real ‘burden’ of ageing depends on the health status of the elderly. The increasing proportion of the ‘oldest old’ (however it is defined) within the group of people 60+ or 65+ is called double ageing.

The question whether double ageing (longevity) is more advanced in non-transition countries than in transition ones is apparently easy to answer: ‘yes, it is’. There are, however, at least two points to be considered. The first is obviously the higher living standards, better social and medical services in Finland, Austria and Portugal than in transition countries, presumably independent of age. This seems to corroborate a positive answer. The second is the fact that most transition countries have very high middle-age mortality for such a long time that suggests the presence of selectivity. It can be presumed that the elderly living in ex-communist countries have more stamina. This represents a counter-argument.

A correct answer could only be given by analysing long time series, preferably by cohorts. Instead, a one-year cross-country comparison will illustrate the present extent of double ageing. Let us consider the ratio of people aged 85+ within the group of people 65 and over.

Figure 3  
Age Composition of the Female Population Aged 65+  
January 1, 2002

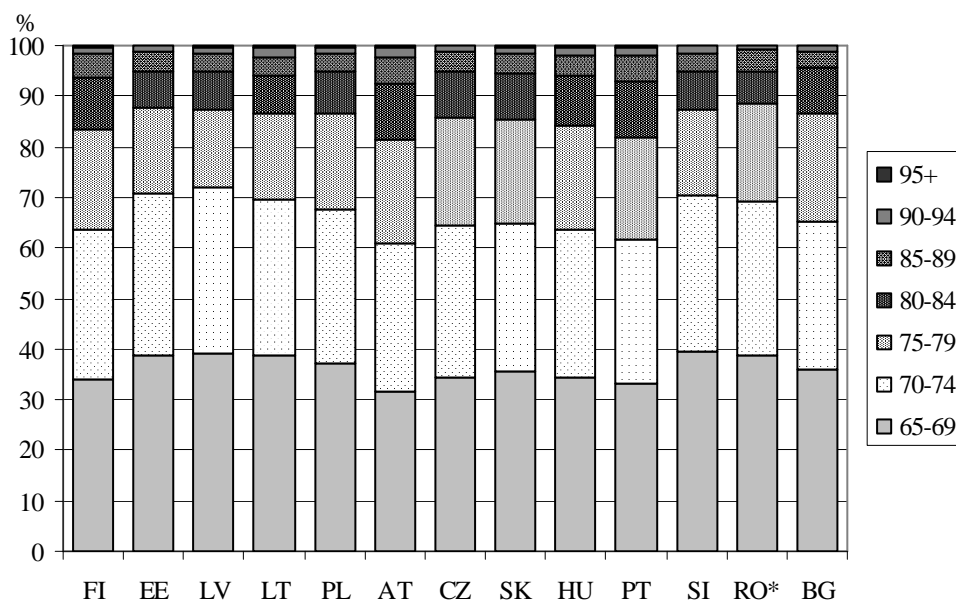


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\*January 1, 2001

Data from Recent Demographic Developments 2002, Council of Europe.

Figure 4  
Age Composition of the Male Population Aged 65+  
January 1, 2002



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\*January 1, 2001

Data from Recent Demographic Developments 2002, Council of Europe.

Table 2  
Double Ageing Ratios, % January 1, 2002  
(countries are listed in increasing order of their respective ratios)

Male population 85+ per 65+		Female population 85+ per 65+	
BG	4.50	BG	5.92
EE	5.03	RO*	6.56
RO*	5.09	SK	7.71
LV	5.12	PL	8.18
SI	5.12	LT	8.45
PL	5.17	HU	8.70
CZ	5.23	LV	9.03
SK	5.38	SI	9.05
LT	5.83	CZ	9.05
HU	5.86	EE	9.38
FI	6.23	PT	10.09
PT	7.06	FI	12.58
AT	7.63	AT	13.48

\* January 1, 2001

Source: Recent Demographic Developments 2002, Council of Europe.

While indicators of single ageing (proportion of 65+ within the total population) did not reveal any systematic differences between the two groups of countries, double ageing is clearly more advanced in non-transition countries and better-off transition countries, particularly among females. Therefore the 'selection' argument can hardly be supported by the figures of age composition. Nevertheless, a comparison of male and female age compositions reveals that single ageing seems to have a stronger gender bias than double ageing. This is indirectly shown by the fact that the correlation between male and female ratios of 85+ per 65+ is stronger

( $R=+0.80$ ) than the correlation between male and female percentages of 65+ within the total population ( $R=+0.62$ ).

## 4 Life Prospects

### Life Expectancies at Birth

Spectacular decreases in infant mortality during 1960–2001 in each transition and non-transition country have little explanatory value concerning variations in the process of ageing and the present health status of the elderly. They have, however, made large contribution to changes in life expectancies at birth. It is interesting to note that in 1960 the lowest infant mortality rates were recorded in the present Czech Republic (20.1) and Finland (21.0) while the highest ones in Romania (74.5) and Portugal (81.5). By 2001 IMRs have been reduced to 3.2 (Finland) and 15.1 (Romania)<sup>8</sup>. Coefficients of variance<sup>9</sup> in infant mortality rates among the 13 countries followed a U shape during the period examined. It was relatively high in 1960 (43.9%), reduced to about 30% during the 1970s–1980s then increased over and above the initial levels reaching the highest value (49.4%) in 1999. Since then it indicates a slight reduction of differences among the countries involved.

First converging and subsequently diverging trends among the countries examined are very distinct in time series of male life expectancies at birth. In 1960 nine countries ranged within a narrow margin, between 64 and 68 years, with transition countries like Bulgaria, Czech Republic and Slovakia ranking the highest.<sup>10</sup> Austria, Hungary, Finland and Slovenia formed a tight group while Portugal (61.2 years) was yet overrun by Poland and Romania (64.9 and 64.1 respectively). By the end of the 1970s, Portugal caught up with the others and soon left all transition countries behind. By 1989 she was very close to crossing over Finland. During the late 1980s Estonia and Lithuania progressed remarkably and Hungary made up some of her previous losses.

The turbulent years of transition around 1990, however, regenerated the process of divergence. Some temporary drops in male life expectancies at birth happened in each country from Poland to Slovenia reaching various depths and occurring at various points in time. But recoveries followed soon. Long term stagnation in Bulgaria and Romania, however, continued until about 1997. From among the 13 countries studied, the ex-soviet Baltic republics were the major losers of the post-transition period. Their male life expectancies at birth decreased by 4 to 6 years during six calendar years and the recovery from the deepest pit in 1994 was less rapid than the previous fall. By 2001 they could not regain their 1988 levels of male life expectancies. Lithuania could only catch up with Hungary and Romania showing rather short life expectancies at birth.

The range of male life expectancies at births within the 13 countries amounted to 5.3 years in 1985 between Austria and Hungary), and reached 11.0 years in 2001 (between Austria and Estonia).

<sup>8</sup> *Recent Demographic Developments 2002*, Council of Europe.

<sup>9</sup> Standard deviation expressed in percentage of the *unweighted* average of infant mortality rates in 13 countries.

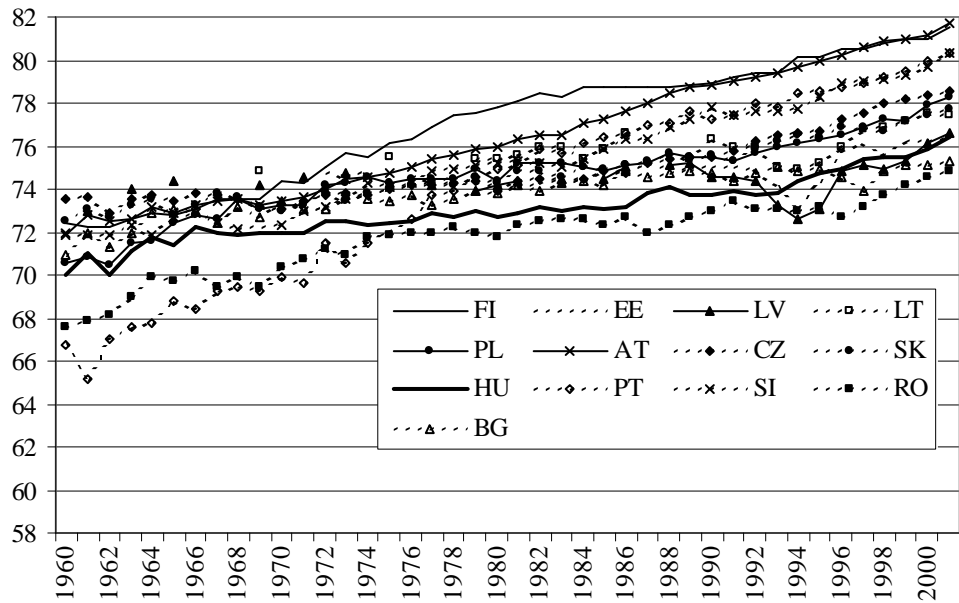
<sup>10</sup> Data from the 1960s are incomplete for the Baltic states.

Trends of female life expectancies at birth appear less dramatic. For 1960 no data are available for Estonia, Lithuania, and Latvia. From among the remaining ten countries eight situated within 70.0 and 73.5 years (Hungary versus the present Czech Republic) while Romania (67.6) and especially Portugal (66.7) lagged far behind. By 1980 ten countries clustered together within a narrow range of 73.8–76.0 (Bulgaria versus Austria). There remained three outsiders, Finland at the upper (77.8), Hungary and Romania at the lower ends (72.7 and 71.8). The 2.4 years of difference in female life expectancies at birth between Finland and Hungary in 1960 more than doubled by 1980. Bulgaria and Romania proceeded along parallel lines with Hungary characterised by no, or very slow improvements. But the Portuguese trend of female life expectancy at birth was rocketing and caught up with Slovenia. They were followed at some distance by the Czech and Slovak Republics.

The period of transition had much less impact on female life expectancies at birth than what was experienced with men. This also stands for the Baltic states, though their divergence from the rest of transition countries is still salient. Between 1987/1988 and 1994 they experienced about 2.5 year loss in female life expectancies at birth but by 2001 each of them surpassed their relevant pre-transition levels. Milder fluctuations did appear in the case of other transition countries. Their overall trends, however, were mounting upward, parallel with flagship countries like Austria and Finland, at lower heights. As a pair Slovenia and Portugal fell somewhat behind the leading countries. Poland, Lithuania, the Czech and Slovak Republics were following them in a solid cluster at about one year distance. Women in Estonia, Hungary and Latvia reached the same levels (76.4–76.6) of life expectancies by 2001. Bulgaria and Romania are at some 1.5 years behind, but their upward trends are promising.

The range of female life expectancies at births within the 13 countries varied between 5.5 (1979) and 7.8 years (in 1996) without any clear direction of change over time. Finland took over the lead in the 1970s, only Austria could challenge her position in the late 1980s. Portugal caught up with Romania in the second half of the 1960s. From that time until early 1990s Romanian and Hungarian women's life expectancies were the smallest. More recent years indicate parallel improvements without significant changes in the order of countries.

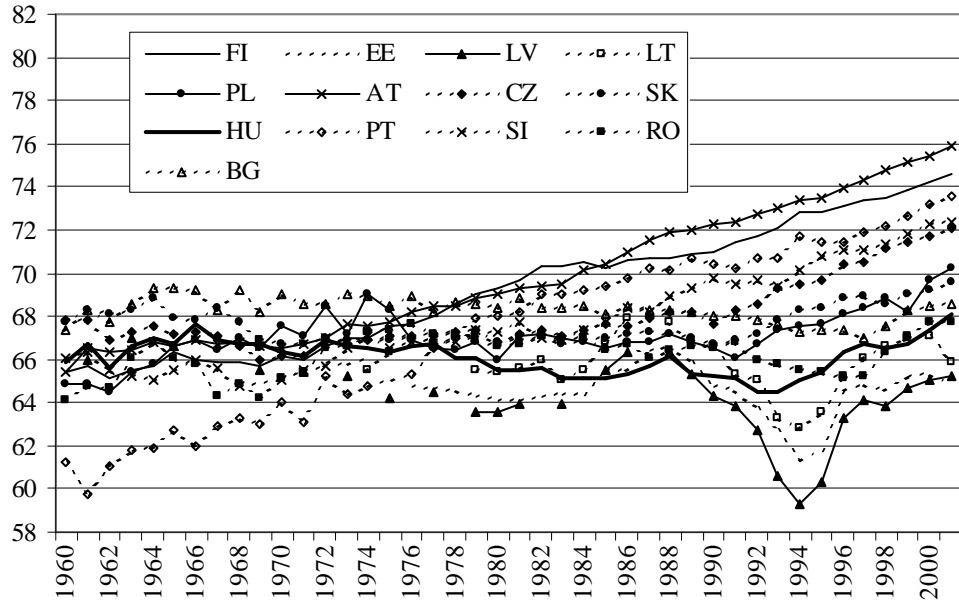
Figure 5  
Female Life Expectancy at Birth, 1960–2001



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Data from Recent Demographic Developments 2002, Council of Europe.

Figure 6  
Male Life Expectancy at Birth, 1960–2001



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Data from Recent Demographic Developments 2002, Council of Europe.

### Growing Old

Old-age survival data bring us closer to our specific subject: the health of the elderly. Trends in life expectancies at the age of 65 show characteristic differences from those in life expectancies at birth in the sense that they were moving along a zigzag course, especially at the beginning of the period studied, and because improvements were delayed (Figures 7 and 8).



As far as elderly women are concerned, changes in their life expectancies did not show any particular pattern during the 1960s (Figure 7). Time series of transition and non-transition countries crossed over each other disorderly. Improvements in old-age life expectancy started earlier among women than among men. Austria, Finland and Slovenia progressed rapidly already in the 1970s. Poland and Slovenia experienced a negative change during the early 1980s. Three distinct groups of countries emerged around the mid-1980s: Finland, Lithuania, Austria and Portugal were at the vanguard; Slovenia, Latvia, Poland and Slovakia in the middle; while Bulgaria, Hungary, the Czech Republic, and Romania at the bottom. The critical years around 1990 made little or no impact on elderly women's life expectancies. Again the Baltic states were hit the most, Lithuania dropped back into the medium group. Some negative changes could also be noticed in Slovenia, Bulgaria and Romania while the Czech, Hungarian, Polish, and Slovak trends do not seem to have been affected.

Looking now at men aged 65, their life expectancies remained within the limits of 11–14 years in each country right from 1960 up to the late 1980s (Figure 8). But the order of countries mixed up. Bulgaria, Romania and Slovakia lost their leading positions and Austria, Finland, Portugal and Slovenia moved ahead. Downward moves and lengthy stagnations in most transition countries clearly indicate that the epidemiological crisis was not confined to middle-aged men. The early years of transition also affected old-age mortality. Between 1987/89 and 1991/94 life expectancies of men aged 65 decreased by 0.6–1.6 years in Romania, Hungary, Estonia, Lithuania, and Latvia. Elderly men living in Bulgaria, Slovakia or Poland suffered less degradation, while in the Czech Republic there was a slight improvement.

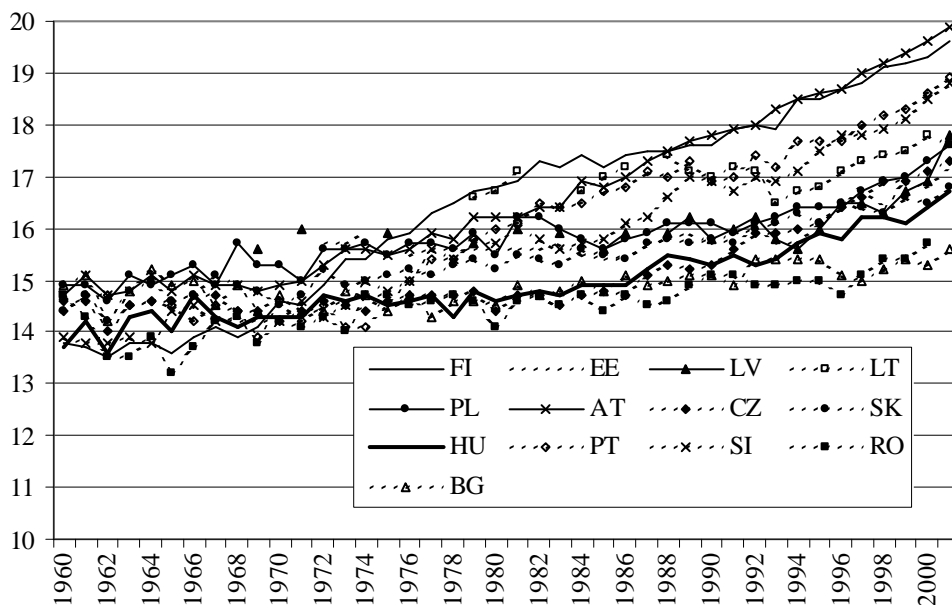
In non-transition countries and Slovenia old-age survival of men started to ameliorate rapidly in the 1980s and the trend accelerated in the 1990s. Other transition countries included in the present paper seem to be catching up recently. Progress achieved in Slovakia, Poland and Lithuania is outstanding.

Recent trends point to a new stage in the mortality patterns of transition countries. It is more than indicative that the gap between absolute increases in female life expectancy at birth and at age 65 is contracting. Between 1990 and 2001 improvements in female life expectancy at age 65 made up over two-thirds of those at birth in each non-transition country and Slovenia, around 50% in all others, with the exception of Romania. The situation is somewhat different with men where these ratios only reach two-thirds in Finland, Austria and the Czech Republic, and are between 50–60% in Poland, Portugal, and Bulgaria. At this point it should be, however, emphasised that middle-aged men's mortality continues to be very high in most transition countries so it is even desirable to have a more rapid progress under 65 years of age.

Proportions of survivors up to high ages reveal another aspect of growing old. These ratios can be obtained from life tables. We examined percentages of women and men reaching 50, 65, 75, and 85 years of age from life tables of 2001 ([www.who.int/countries](http://www.who.int/countries)) (Figures 9 and 10). It was assumed that cross-country variations in these ratios would be higher in male than in female population and will increase with age. Not surprisingly, both assumptions proved to be correct when coefficient of variance was used as a measure (Table 3). Nonetheless, absolute differences in percentages of

people surviving to high ages between transition and non-transition countries may be of more interest. Ranges between countries with the highest and the lowest ratios are therefore also presented in the table. Although the higher the age, the lower the percentage of survivors, ranges still increase with age, expressing growing cross-country mortality differences in older age groups.

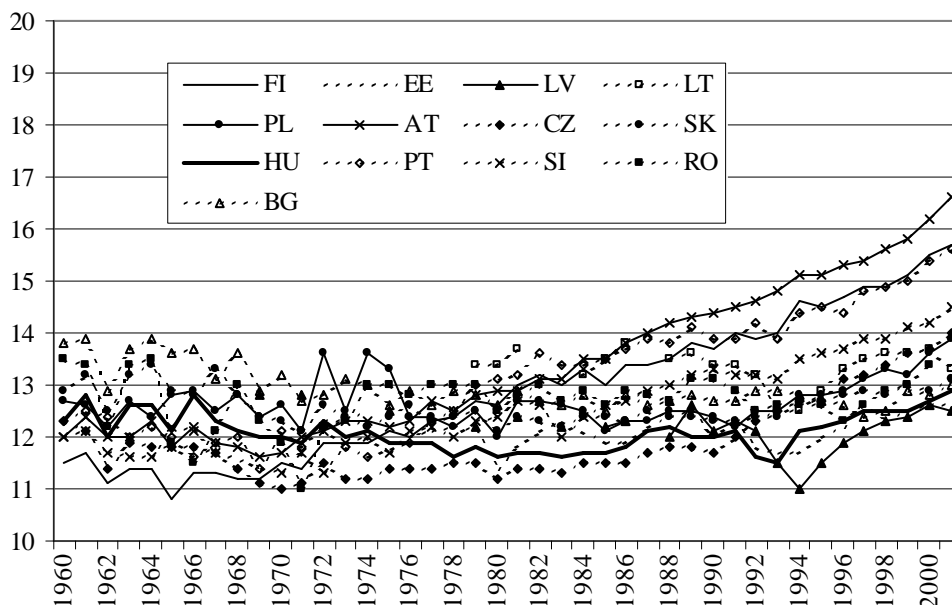
Figure 7  
Female Life Expectancy at Age 65, 1960–2001



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Data from Recent Demographic Developments 2002, Council of Europe.

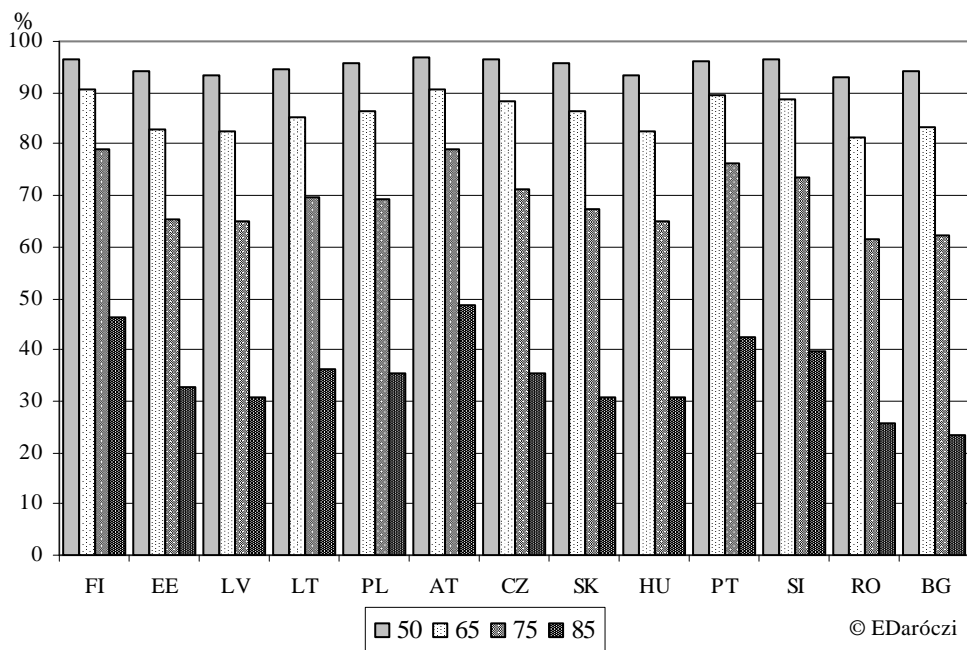
Figure 8  
Male Life Expectancy at Age 65, 1960–2001



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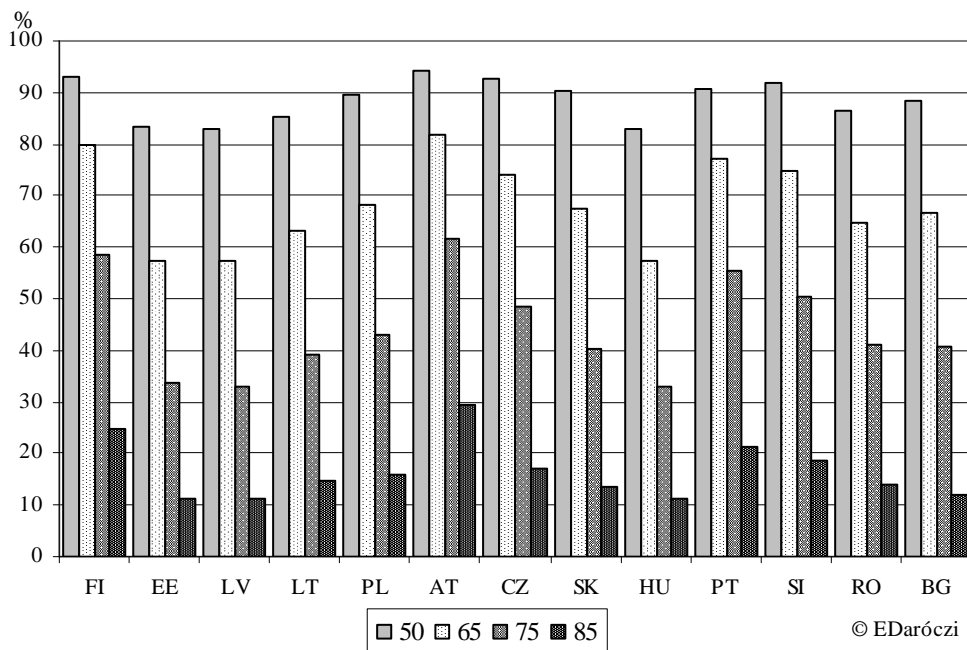
Data from Recent Demographic Developments 2002, Council of Europe.

Figure 9  
*Proportion of Female Survivors up to Ages 50, 65, 75 and 85  
 from Life Tables of 2001*



Data from [www.who.int/countries](http://www.who.int/countries).

Figure 10  
*Proportion of Male Survivors up to Ages 50, 65, 75 and 85  
 from Life Tables of 2001*



Data from [www.who.int/countries](http://www.who.int/countries).

Table 3  
*Variation among 13 Countries in the Percentages of Men and Women  
 Reaching 50, 65, 75, and 85 Years of Age in 2001*

Years of age	50	65	75	85
STD %, Females	4.2	10.7	25.2	72.4
STD %, Males	12.9	36.0	64.6	111.9
Range in percentage points, Females	4.0	9.2	17.5	25.5
Range in percentage points, Males	11.4	24.6	28.8	18.6

*Source:* Life tables from: [www.who.in/countries](http://www.who.in/countries).

There is, however, one exception. While the range at age 75 is 28.8 percentage points among males (61.7% in Austria versus 32.9% in Latvia), it drops to 18.6 percentage points at age 85 (29.6% in Austria versus 11.1% in Latvia). No similar decrease can be found among women. A plausible explanation is the excess premature male mortality in transition countries, the already mentioned selection effect. It seems that the stamina of men who survived up to 75 years of age in transition countries does not lag so much behind the health status of their counterparts in Austria, Finland or Portugal – compared to those aged 65.

### **Health in Old Age**

In the last section of this cross-national review first the portion of time spent in ill health and good health will be examined when people grow old. For this purpose total and healthy life expectancies at age 60 will be compared. Data are taken from *Life Tables for 191 countries for 2000* (calculated by Lopez et al. 2001) and *Healthy life expectancy (HALE) in all Member States, estimates for 2000 and 2001* ([www.who.int/countries](http://www.who.int/countries)<sup>11</sup>).

The major question is: does longevity involve more years to live in similar, better or worse conditions? A single-year, cross-country comparison cannot give a satisfactory answer but could indicate plausible directions.

The ecological correlation between the total *number* of years to be expected at age 60 and the *portion* to be spent in good health was found positive. The longer the life over 60, the larger its share in good health. But the correlation is not very strong:  $R=+0.4624$  among females and  $R=+0.6032$  among males. And this finding only seems to be valid across countries within the same sex. Though healthy life expectancies of men at age 60 are shorter than female ones in each country studied (the unweighted averages are 12.2 and 15.4 years respectively), this is not necessarily the case for their portion of healthy life expectancies. If three percentage point difference between female and male values can be considered as significant, aged men seem to be healthier than elderly women in Finland, Austria, Bulgaria and Poland. The contrary is the case in Hungary, Lithuania and Latvia. It is unknown to what extent these variations reflect reality and to what extent they show uncertainties in measurement and estimates of health (see footnote 11). In any case, unweighted averages of the relative lengths of healthy life expectancies at age 60 in the 13 countries (72.7% in men and 72.2% in women) conceal important cross-country differences. Some

<sup>11</sup> In the explanatory notes WHO warns the users to be cautious: “HALE uncertainty is a function of the uncertainty in age-specific mortality measurement for each country, of the uncertainty in burden of disease based estimates of country-level disability prevalence, and of uncertainty in the health state prevalences derived from health surveys.”  
[www3.who.int/whosis/hale/hale.cfm?path=whosis,burden\\_statistics,hale&language=english](http://www3.who.int/whosis/hale/hale.cfm?path=whosis,burden_statistics,hale&language=english).

surveys on health report that women not only complain more than men, but are actually less healthy, particularly if not only physiological but also psychological conditions are taken into account (European Opinion Research Group 2003a and 2003b). Details will be presented for Hungary in the second part of this paper.

Table 4  
*Total and Healthy Life Expectancies at Age 60 in 2000/2001*

Country	Males				Females			
	e <sub>60</sub> years (2000)*	Healthy e <sub>60</sub> years (2001)**	No of years in ill health over 60	Healthy e <sub>60</sub> %	e <sub>60</sub> years (2000)*	Healthy e <sub>60</sub> years (2001)**	No of years in ill health over 60	Healthy e <sub>60</sub> %
FI	18.7	15.2	3.5	81.3	23.5	18.1	5.4	77.0
EE	15.3	11.1	4.2	72.5	21.0	15.0	6.0	71.4
LV	15.8	10.0	5.8	63.3	20.8	14.4	6.4	69.2
LT	17.1	11.0	6.1	64.3	22.0	14.8	7.2	67.3
PL	16.8	11.9	4.9	70.8	21.5	14.6	6.9	67.9
AT	19.4	15.7	3.7	80.9	23.9	18.5	5.4	77.4
CZ	17.0	12.8	4.2	75.3	21.2	16.0	5.2	75.5
SK	16.0	11.5	4.5	71.9	20.9	14.6	6.3	69.9
HU	14.9	10.4	4.5	69.8	19.6	14.4	5.2	73.5
PT	18.0	13.4	4.6	74.4	22.3	16.2	6.1	72.6
SI	18.0	13.3	4.7	73.9	22.3	16.6	5.7	74.4
RO	15.4	11.1	4.3	72.1	18.9	13.5	5.4	71.4
BG	15.5	11.5	4.0	74.2	19.6	13.9	5.7	70.9

Source: \*Lopez et al. 2001, and \*\*Healthy life expectancy (HALE) in all Member States, estimates for 2000 and 2001 ([www.who.int/countries](http://www.who.int/countries)).

Another, indirect, way to review health in old age in a cross-national perspective is to look at cause-specific, standardised death rates. It can be presumed that SDRs, on the whole, are less affected by measurement uncertainties than it can be the case with HALE. Diagnoses practices, however, do change over time and vary across country. And unreliability of cause-specific mortality data increases with age due to multiple pathologies, routine diagnoses, etc. In order to minimise this impact cause-specific SDRs will only be examined for two leading groups of causes (diseases of the circulatory system and malignant neoplasms), and, for different reasons, external causes. Age-standardised death rates of the male and female population aged 65+ will be compared over time – from 1985 to 2002 – and across space. Three-year averages of annual SDRs taken from the European Health for All database will be used to smooth fluctuations.

Let us consider SDR for all causes first. Male old age mortality decreased in each country between 1985–87 and 1990–92 as well as between 1995–97 and 2000–02. Improvements were, as a rule, accelerating, being much more significant in the latter period when even certain high mortality transition countries (like Latvia, Poland, and Hungary) achieved considerable results. Nevertheless, regional variations have not been reduced because old age mortality continued to fall in better-off countries (like Finland, Austria, and Portugal). Changes in male old age mortality between 1990–92 and 1995–97 were more variable. One can see both important drops (Finland, Czech Republic, and Poland) and significant growths (Latvia, Lithuania, Romania, and Bulgaria). The split of transition countries into these two groups reflects the health consequences of early stages of transition in the respective states.

Table 5  
*Three-year Unweighted Averages of SDR, All Causes,  
65+, per 100,000, Male Population*

	1985–87	1990–92	1995–97	2000–02
FI	7587	7066	6422	5787
EE	8961	8844	8629	8213
LV	8699	8586	8995	8152
LT	7484	7396	7637	7281
PL	8851	8411	7802	7010
AT	7252	6567	6006	5281
CZ	9592	9047	7840	7166
SK	8180	8159	7921	7713
HU	9030	8886	8411	7630
PT	7626	7043	6581	5897
SI	7979	7564	7089	6657
RO	8373	7969	8292	7626
BG	8627	8216	8720	8122
Max	9592	9047	8995	8213
Min	7252	6567	6006	5281
Range	2340	2480	2989	2932
STD	682	763	905	922
STD%	8.19	9.56	11.72	12.95

*Source:* European Health for all database (www.euro.who.int).

Table 6  
*Three-year Unweighted Averages of SDR, All Causes,  
65+, per 100,000, Female Population*

	1985–87	1990–92	1995–97	2000–02
FI	4 654	4 380	3 981	3 612
EE	5 958	5 693	5 320	4 885
LV	5 897	5 594	5 507	5 044
LT	5 131	4 834	4 906	4 464
PL	5 820	5 501	5 225	4 558
AT	4 879	4 352	3 938	3 549
CZ	6 480	5 869	5 297	4 842
SK	5 561	5 425	5 258	5 070
HU	6 190	5 957	5 541	4 999
PT	5 118	4 822	4 374	3 911
SI	5 339	4 913	4 468	3 958
RO	7 032	6 415	6 317	5 756
BG	6 786	6 240	6 615	6 104
Max	7032	6415	6615	6104
Min	4654	4352	3938	3549
Range	2378	2062	2677	2555
STD	705	646	775	746
STD%	12.24	12.00	15.10	15.96

*Source:* European Health for all database (www.euro.who.int).

Changes in female old age mortality are more complex. There are similarities to those among males insofar each country experienced drops between 1985–87 and 1990–92 as well as between 1995–97 and 2000–02. Acceleration in improvements was not a universal process. It was noticeable in Estonia, Poland, Slovakia, Hungary, and Slovenia. But in Austria and the Czech Republic improvements gradually decelerated. During the late 1990s several high mortality countries (like the Baltic states, Poland, the Czech Republic, Hungary, Romania, and Bulgaria) reported larger absolute

reductions in female old age SDRs than Finland or Austria. In more advanced transition countries (the Czech Republic, Hungary, and Slovenia) this was the case already during the early 1990s while in less fortunate states female old age mortality showed little improvements (Slovakia), no change (Latvia, Lithuania, and Romania), or increase (Bulgaria). Regional differences increased during the early 1990s, then stabilised.

Diseases of the circulatory system represent the largest group of causes of death at high ages. In 2000–02 their relative weight ranged between 40–46% (Finland, Portugal, and Slovenia) and over 70% (Romania and Bulgaria) within all male causes of death 65+. The contribution of circulatory diseases to elderly women's mortality represented 47–50% in Finland, Portugal and Slovenia, while 70% or more in Latvia, Lithuania, Slovakia, Romania, and Bulgaria during the same years. Some of these variations may reflect dissimilarities in coding practices, but systematic cross-country differences and characteristic secular changes in old age SDR levels due to this leading cause of death shall be taken as valid.

Male old age mortality levels due to diseases of the circulatory system (Figure 12) exhibit a clear-cut welfare divide: non-transition countries and Slovenia have low levels and stepwise secular decreasing trends while all other transition countries have high levels. The latter group can be further split into: (a) countries with significant advances with regard to the cardiovascular revolution and the command of hypertension (Estonia, Poland, Hungary, and the Czech Republic); and (b) countries with modest improvements (Latvia, Lithuania, Slovakia, Romania, and Bulgaria). No surprise that one subgroup eventually comprises the more and the other the less developed transition economies.

As for elderly women's circulatory SDR (Figure 11), Finland, Austria, Slovenia, and Portugal form again a separate group for reasons mentioned above. The remaining nine countries include five (Estonia, Latvia, Poland, the Czech Republic and Hungary) with high or moderate but decreasing levels, and four (Lithuania, Slovakia, Romania, and Bulgaria) with high or moderate and hardly improving levels.

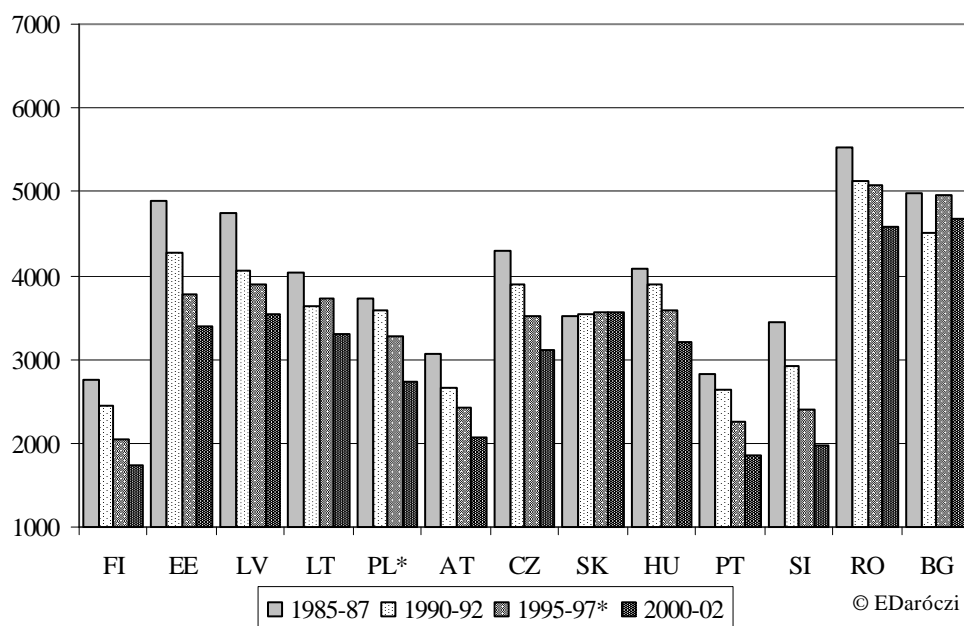
Regional variations (among the 13 countries involved) in SDR 65+, diseases of the circulatory system, increased significantly both in men (a) and women (b):

- (a) from 839 STD, per 100,000 in 1985–87 to 1103 in 2000–02 or from 16.2 to 27.0 STD%;
- (b) from 840 STD, per 100,000 in 1985–87 to 923 in 2000–02 or from 21.0 and 30.2 STD%.

Malignant neoplasms represent the second major group of causes reviewed (Figures 13 and 14). Cross-country differences in STD levels for this group of causes are smaller than in the case of circulatory diseases but still significant. Bulgaria and Romania show surprisingly low old age cancer mortality levels both among women and men: diagnosis practice is suspected to be the main reason. During the period studied, no medical, behavioural or environmental breakthrough can be reported to have influenced the risk of dying in malignant neoplasms. Nevertheless, the most advanced countries (in our sample Finland and Austria), can boast sustained improvements in both female and male old age mortality due to this group of causes. The other extreme is illustrated by the Baltic states, Poland, Slovakia, and Romania where both female and male old age STDs due to

cancer have been increasing, more among men than among women. In Slovenia cancer mortality has only been rising among elderly males, while stagnating among elderly females. Stagnation or little change can be noticed in both men and women in the Czech Republic, Hungary, Portugal, and Bulgaria.

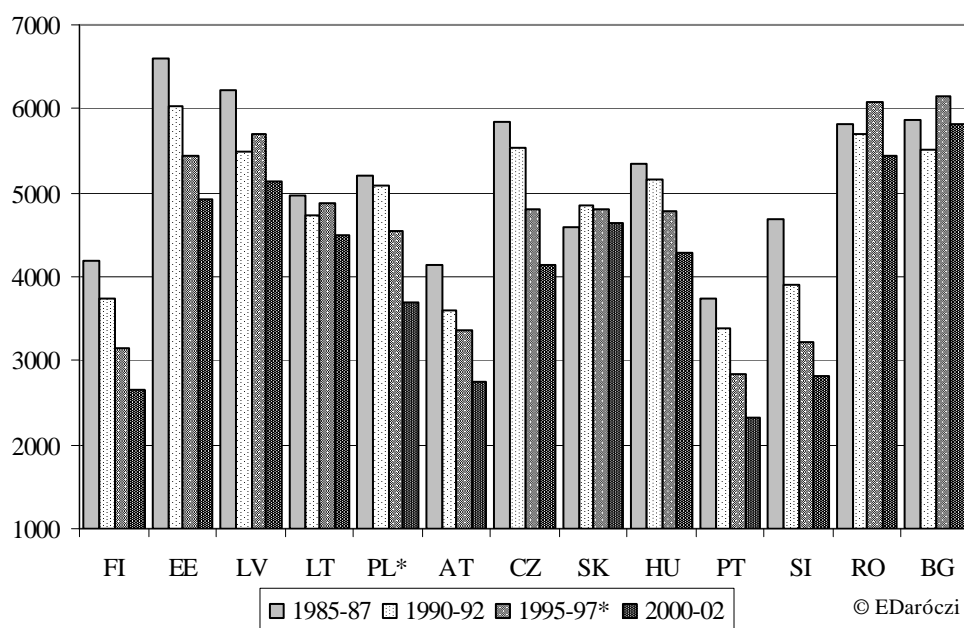
Figure 11  
*SDR Annual Averages, Diseases of Circulatory System,  
 65+, per 100,000, Female Population*



\* Poland 1995–96

Data from European Health for All Database; [www.euro.who.int](http://www.euro.who.int).

Figure 12  
*SDR Annual Averages, Diseases of Circulatory System,  
 65+, per 100,000, Male Population*

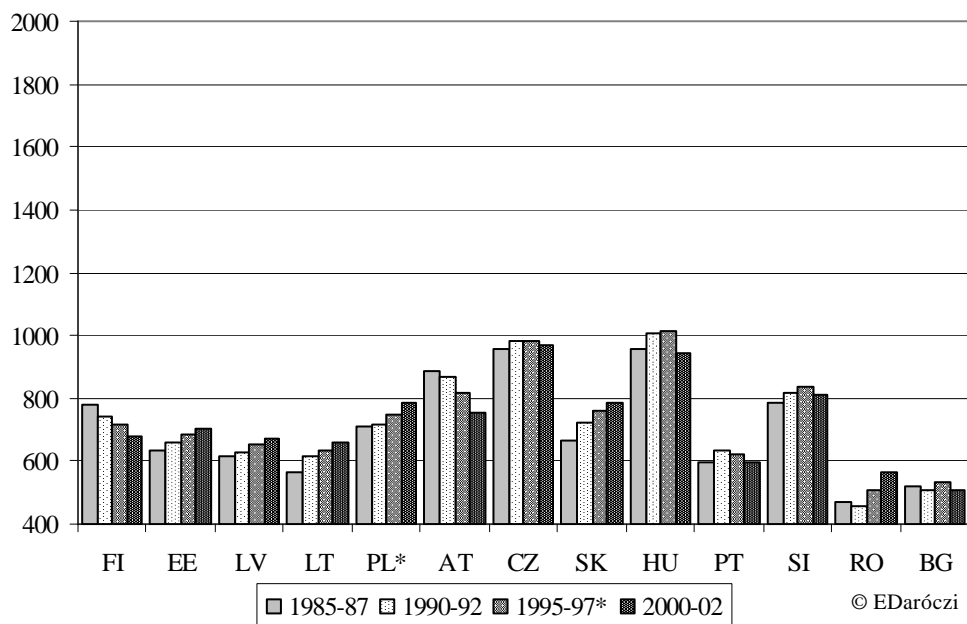


\* Poland 1995–96

Data from European Health for All Database; [www.euro.who.int](http://www.euro.who.int).

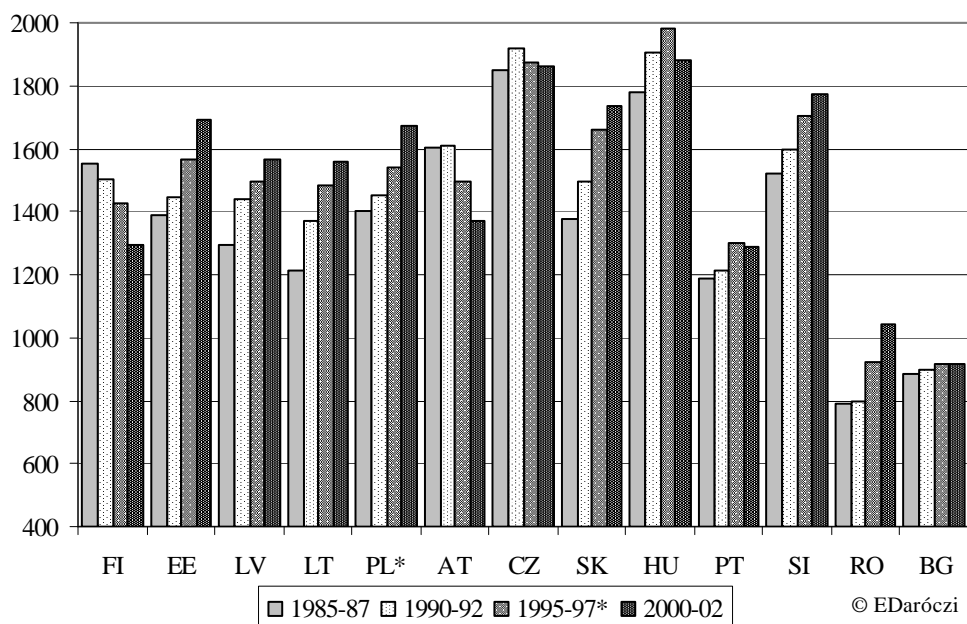


Figure 13  
*SDR Annual Averages, Malignant Neoplasms,  
 65+, per 100,000, Female Population*



\* Poland 1995-96  
 Data from European Health for All Database; www.euro.who.int.

Figure 14  
*SDR Annual Averages, Malignant Neoplasms,  
 65+, per 100,000, Male Population*



\* Poland 1995-96  
 Data from European Health for All Database; www.euro.who.int.

Regional variations (among the 13 countries involved) in SDR 65+, malignant neoplasms, increased over time, somewhat more in men (a) than in women (b):

(a) from 682 STD, per 100,000 in 1985–87 to 922 in 2000–02 or from 8.2 to 13.0 STD%;

(b) from 705 STD, per 100,000 in 1985–87 to 746 in 2000–02 or from 12.20 and 16.0 STD%.

Deaths due to external causes make up a small fraction of all deaths. They have been included in this cross-country review because significant changes in their levels are hypothesised to reflect dramatic social changes (abrupt increase) or stability (steady decrease). It is therefore of interest to see in what way unnatural mortality changed following the transition among the elderly.

The relative weight of external causes within all deaths 65+ ranged between 2–5.5% among men and 1–5.9% among women considering the four time periods in the analysis. The lowest ratios could be found in Poland, Portugal, Bulgaria, and Romania while the highest ones in Finland, the Baltic states, Hungary, and Slovenia. The dividing line between these two groups of countries does not seem to be either economic or political, but rather cultural-geographical.

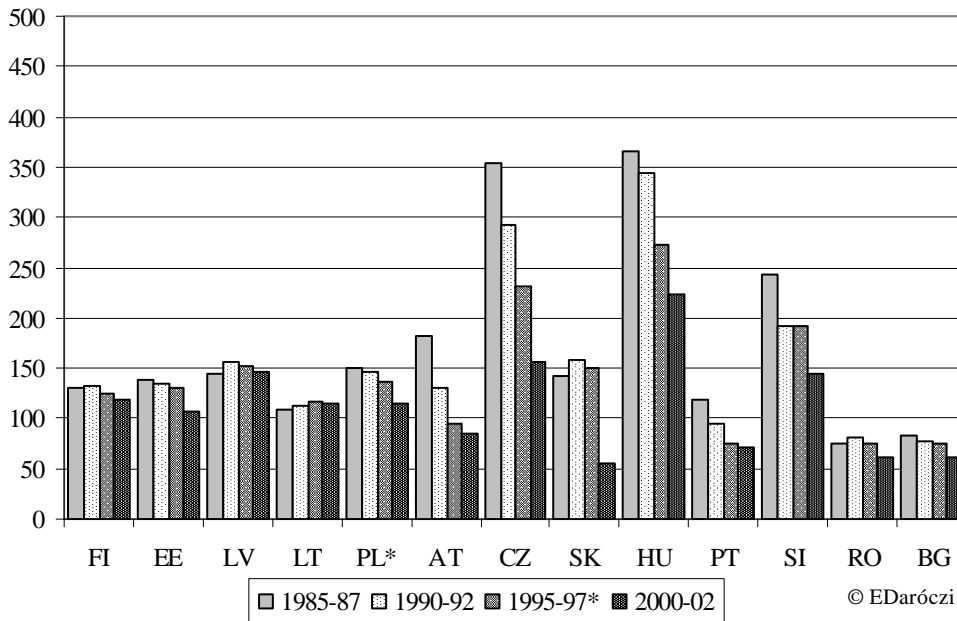
Let us now look at changes over time. The general trend is decrease or stagnation in the SDR levels 65+ due to external reasons. From among non-transition countries Austria and Portugal reinforced their favourable position while very little improvement happened in Finland. Important drops occurred in each transition country where both male and female old age mortality for external causes was outstandingly high (the Czech Republic, Hungary and Slovenia) during the 1980s. In the three Baltic states, however, we can witness an opposite change: the 2000–02 old age mortality levels due to unnatural reasons were much higher than those in 1985–87, but only in men. Thus gender differences increased considerably. Male excess mortality 65+ for external causes – in spite of some decrease – has remained large in Finland and Slovenia, moderate in Slovakia, Hungary, Portugal and Bulgaria while relatively small in Poland, Austria, the Czech Republic and Romania.

There was only a slight increase in regional variations (among the 13 countries involved) in SDR 65+, external causes in men (a) and some decrease among women (b):

(a) from 88 STD per 100,000 in 1985–87 to 90 in 2000–02 or from 31.0 to 34.8 STD%;

(b) from 90 STD, per 100,000 in 1985–87 to 46 in 2000–02 or from 47.9 and 41.2 STD%.

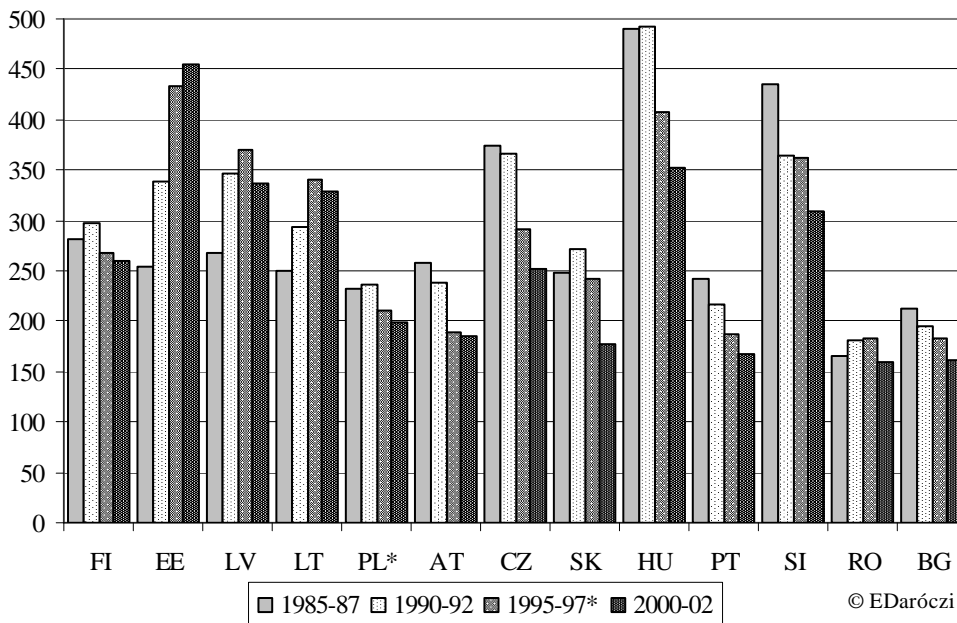
Figure 15  
*SDR Annual Averages, External Cause, Injury and Poison, 65+, per 100,000, Female Population*



\* Poland 1995–96

Data from European Health for All Database; [www.euro.who.int](http://www.euro.who.int).

Figure 16  
*SDR Annual Averages, External Cause, Injury and Poison, 65+, per 100,000, Male Population*



\* Poland 1995–96

Data from European Health for All Database; [www.euro.who.int](http://www.euro.who.int).

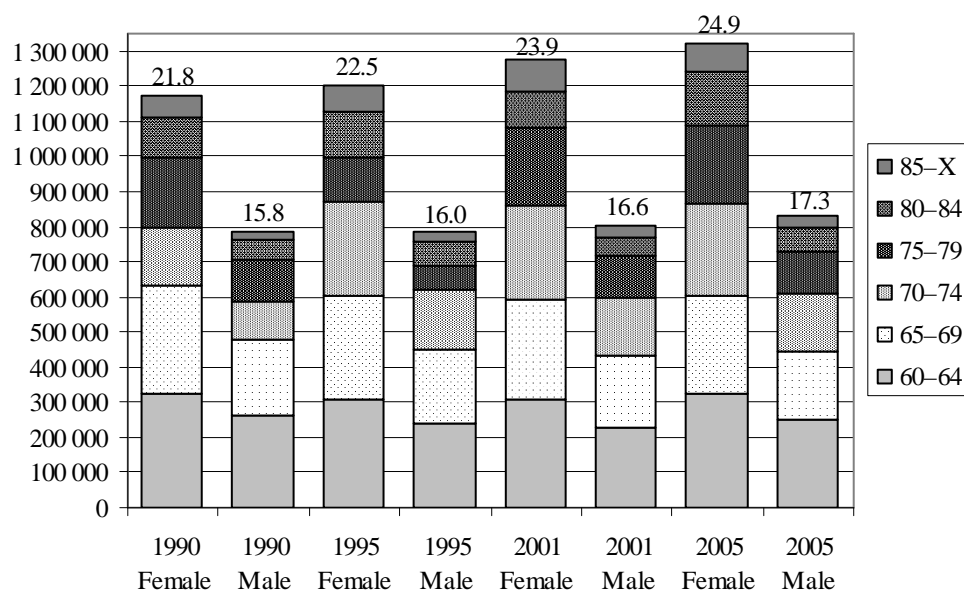
Having finished the section on comparative analysis of health status and ageing in selected European countries, now we look at the specific situation in Hungary.

## 5 Health Status of the Elderly Population in Hungary

### Lessons from the Census

Since 1981 the total population of Hungary has been steadily decreasing (from 10,709,463 in 1980 to 10,097,549 in 2005) but the elderly population (people 60 and over in Hungarian statistics) has kept expanding. The 2001 census<sup>12</sup> found more than two million old people (805,000 men and 1,277,000 women) in Hungary. Between 2001 and 2005 the group of younger elderly people (60–74) increased by a mere one percent while in the group of 75+ there were 8.6% more men and 10.1% more women in 2005 than in 2001. Particularly the number of people aged 80–84 increased, by almost 50% (Figure 17). This essentially results from a generation effect, postponement of births during the First World War and a baby boom during the 1920s. Thus the increase is not due to the better health among these people. On January 1, 2005, Hungarian people aged 65+ represented 18.9% among females and 12.0% among males and the dependency ratios amounted to 22.7% and 99.9% (65+ over 15–64 and 65+ over 0–14 respectively).<sup>13</sup>

Figure 17  
Population Aged 60+ by Age and Sex in Hungary,  
1990, 1995, 2001 and 2005



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Data from Demographic yearbooks 2000 and 2005. Budapest, CSO.

<sup>12</sup> For further details consult: [www.nepszamlalas.hu](http://www.nepszamlalas.hu).

<sup>13</sup> *Demographic Yearbook 2004*, Central Statistical Office, Budapest: 2005.

The last two Hungarian censuses had one single item on health relating to disability and impairment. In 1990 this item was asked in a 20% random sample of the total population, while in 2001 it was generally asked as an optional question (like nationality, cultural identity, religion).<sup>14</sup> Data concerning health were collected in personal interviews, based on self-assessment, no medical cheque was made or certificate requested. The refusal rate was altogether 2%. The extremely high compliance ratio was achieved with the co-operation of civil organisations of people with disability, which communicated the importance of collecting such data. In case of the elderly, however, it should be remembered that:

„It has remained unsolved whether old people should rather define themselves as old or should regard their locomotor disorders, hearing and vision impairments accompanying their age as disabilities.”<sup>15</sup>

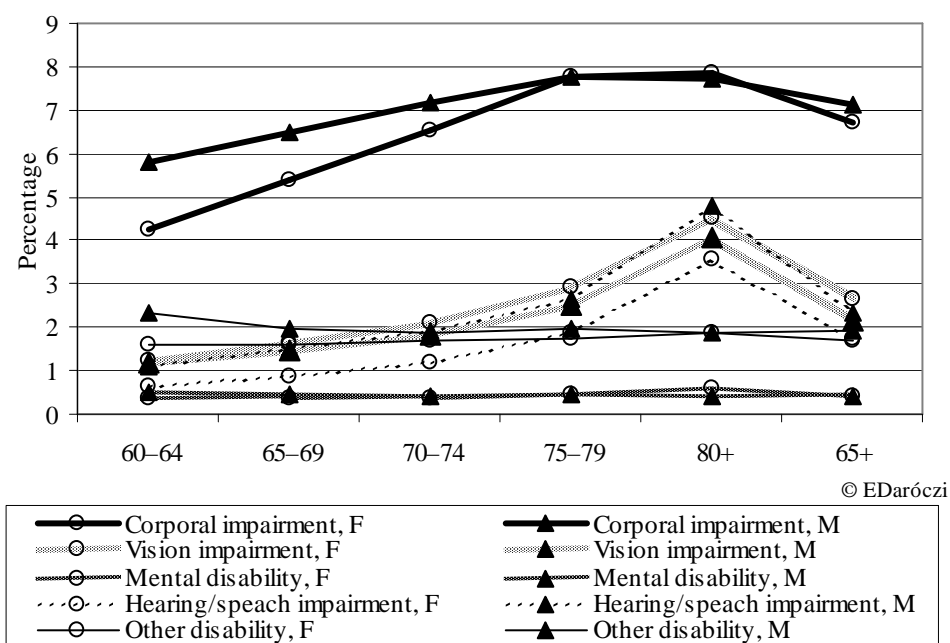
The apparent significant increase in the number and proportion of people with disability from 1990 to 2001 should therefore be handled with caution. In 2001 577,000 people or 5.7% of the total population reported some kind of disability. 69.4% among them lived in family, 18.5% in single households, 7.9% in institutions and 4.2% in some other way. Compared to the previous census, a larger portion of disabled persons lived alone, and a smaller one in institutions. In 2001 the number of 60+ with disability amounted to 259,000 or 12.4% of this age group. Figure 18 displays disability prevalence rates among the elderly by age, sex and aggregate groups of disability.

<sup>14</sup> Excerpt from the 2001 Census Questionnaire [www.nepszamlalas.hu](http://www.nepszamlalas.hu):

Questions on deficiencies				
25.1 What deficiencies do you				
	no deficiencies... <input type="checkbox"/>	0		do not wish to answer... <input type="checkbox"/>
				99
deficiency in movement... <input type="checkbox"/>	1	mental deficiency... <input type="checkbox"/>	4	defective speech... <input type="checkbox"/>
				7
hard of seeing... <input type="checkbox"/>	10	hard of hearing... <input type="checkbox"/>	5	dumb... <input type="checkbox"/>
				8
blind in one eye... <input type="checkbox"/>	11	deaf... <input type="checkbox"/>	6	deaf and dumb... <input type="checkbox"/>
				9
blind... <input type="checkbox"/>	12	other physical deficiency... <input type="checkbox"/>	3	other... <input type="checkbox"/>
				13
Please mark three deficiencies maximum				
25.2 If you have more deficiencies, which one of them do you think is the most serious?				
<input type="checkbox"/> <input type="checkbox"/>				
25.3 What caused the most serious deficiency?				
congenital... <input type="checkbox"/>	1	accident... <input type="checkbox"/>	2	disease... <input type="checkbox"/>
				3
don't know... <input type="checkbox"/>	4			

<sup>15</sup> Hungarian Census 2001, Volume 12: Disabled (in Hungarian: Népszámlálás 2001: 12. kötet, A fogyatékosok helyzete). KSH, Budapest [www.nepszamlalas.hu](http://www.nepszamlalas.hu).

Figure 18  
*Disability Prevalence Rates in Elderly Female and Male Population  
 Hungary, 2001*



Calculated from Hungarian Census data.

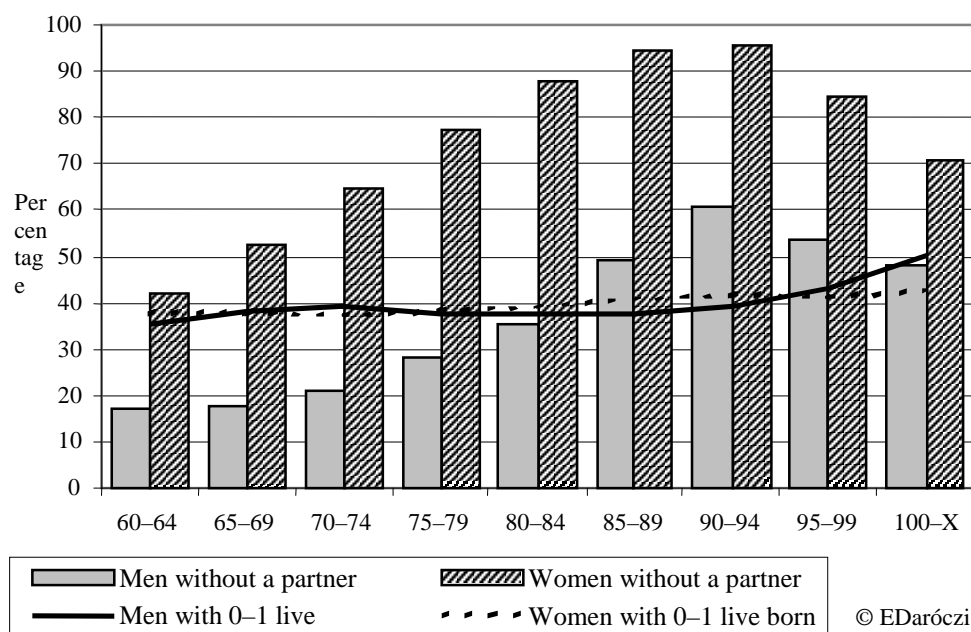
Corporal impairment, including locomotor disorder (amounting to 80–90% of this group of disability), is the most widespread. Its frequency increases rapidly between 60 and 80 years of age while vision and hearing impairments have steep gradients above 80.

Quality of life of the elderly also depends on their living arrangements. Census data on household composition can give us some clue. In 2001 40% of the 3.1 million Hungarian households included at least one elderly person, either living alone, or with young, middle aged or (an)other old person(s). 934,000 households only had aged members counting 1,232,000 people. In more than half of such households (526,000) older people lived on their own. The age composition of the elderly people living alone was as follows: 37.3% aged 60–69, 44.9% aged 70–79, and 17.8% aged 80+. The number of elderly living in institutions is not large, representing 8.4% of those living alone. In 2001 the total number of institutionalised elderly amounted to 14,000 men and 30,000 women. 82% of these men and 85% of these women lived in long care social (community) homes. Most elderly people living in such homes are at least 80 year old (38.0%), or between 70 and 80 (37.3%), and about one quarter of them are aged 60–69.

As for informal support, people living with a spouse or a partner and those having children are in a favourable situation. They are the most likely to have somebody to rely on in case of disability, illness, psychological problems or when emotional support is needed. According to the 2001 census, 22.5% of men and 62.7% of women aged 60+ lived without a spouse or a partner. Their number of living children is unknown. We can only tell that more than one third (38%) of the elderly have none or only one child born during their lifetime. This ratio is relatively stable in each elderly age group (Figure 19), but it will substantially increase in the future.

Figure 19

*Proportion of Elderly (a) Living without a Spouse or a Partner  
(b) Having None or Only One Child Born during Lifetime, Hungary, 2001*



Calculated from Hungarian Census data.

Table 7 displays the number and percentage of a vulnerable group, those who live without a spouse/partner *and* have maximum one child born during lifetime. Due to excess male mortality, almost every fourth woman aged 60+ belongs to this group while only about every ninth elderly man is in this situation. And since aged women outnumber aged men this involves that about 80% of elderly in need of external protection, are women.

Table 7

*Living without a Spouse or a Partner and Having No or Only One Child Born during Life Time, Hungary, 2001*

Age group	Men (persons)	Women (persons)	Men (percentage)	Women (percentage)
60-64	22,238	53,457	9.7	17.5
65-69	18,848	59,583	9.3	20.7
70-74	17,860	66,724	10.6	24.8
75-79	15,144	65,773	12.8	29.9
80-84	7,419	35,816	15.0	34.2
85-89	5,258	24,460	20.2	38.6
90-94	1,911	8,668	25.2	40.1
95-99	467	1,583	27.1	37.1
100-x	129	198	35.9	34.7
<i>Total</i>	<i>89,274</i>	<i>316,262</i>	<i>11.1</i>	<i>24.8</i>

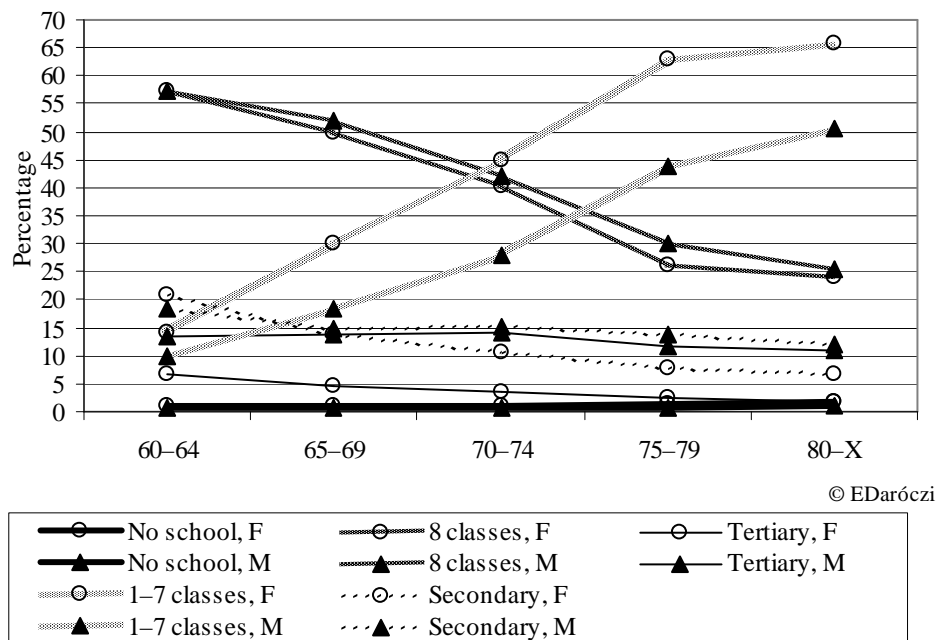
Calculated from Hungarian Census data.

Another group of old persons facing particular difficulties are those who live in small settlements. Villages with less than 200 inhabitants have no local general practitioner and only 8% of villages with 200-499 people and

44.5% of those with 500–999 population do have a doctor.<sup>16</sup> In the census year of 2001, 9% of the elderly lived in small (<1,000 inhabitants) settlements where they made up 24% of the total number of local residents on average. This involves 131,000 persons aged 60–74 and 55,000 aged 75+.

Educated people’s health is usually better, for several reasons. They have higher living standards, are less exposed to environmental risks at home and work, are better informed about healthy lifestyles, have easier access to health services and have stronger self-assertion. It is therefore not without interest what educational profile elderly have. The number of illiterate persons in Hungary is insignificant. In 2001 the proportion of those who had not attended school was around 1% among the people aged 75+. Towards younger generations the share of elderly who had successfully completed at least eight classes (general or maternal school) is rapidly increasing. It reaches 89% among men and 85% among women aged 60–64. There is, however, a large gap in the number of old persons with secondary school certificate. Their proportion is only about 30% even among the 60–64 with little difference between men and women. And the number of aged people who have a college or university degree is particularly small even in the younger age groups of the elderly population and the gender gap is wide (Figure 20). Since college and university enrolment rates have suddenly and significantly increased from the 1990s, educational composition of the aged (particularly that of females) will dramatically change in the future.

Figure 20  
*Distribution of Elderly Female and Male Population  
 by Education, Hungary, 2001*



Calculated from Hungarian Census data.

In Hungary the health (mortality) gap is particularly large between people with an elementary, or lower, educational level and those with secondary

<sup>16</sup> Data from 2003. Source: *Hungarian Statistical Yearbook 2003*, Budapest, KSH, 2004: 191.



school certificate (Klinger 2001; Kovács 2003; Daróczy 2005). Health of less educated older people had been undermined first in their childhood, due to their parents' poverty, lack of knowledge and unhealthy lifestyle, and by the inherited difficult living circumstances, accumulated and late effects of hardships and risks at work. This has been exacerbated by the negative effects of modest earnings and small pensions<sup>17</sup>, and, in many cases, by the lack of family and community support. Furthermore, the post-transition period has not brought any progress in the access to social and health sectors, rather the contrary. Medical services continue to be the stepchildren of government policies, very little financial means and intellectual capacities are mobilised for saving and restoring people's health. This intolerable situation puts all ages at risk but old people are particularly affected.

Most information on health and morbidity are provided by the staff of medical institutions (general practitioners, specialists, dispensaries, hospitals, etc.) as required by the National Statistical Data Collection Program (in Hungarian: *OSAP*). From among all regular *NSDCP* health data, those provided by general practitioners every second year are the most valuable when reporting on the health status of the elderly. The latest data available enable us to review diseases of one quasi-old and two elderly age groups (55–64; 65–74; 75+) as registered by GPs in 2003.<sup>18</sup>

## Elderly in GP Database

The review will be restricted to the top ten categories of diseases among the oldest (75+). In this age group, the ten most frequent diseases are the same for both sexes, only their order of significance is different. In this section diseases will be listed following their rank order among *women* aged 75+:

- 1 Hypertensive diseases: I10-I15
- 2 Ischaemic heart diseases: I20-I25
- 3 Disorders of bone density and structure: M80-M85
- 4 Spondylopathies: M45-M49
- 5 Diabetes mellitus: E10-E14
- 6 Cerebrovascular diseases: I60-I69
- 7 Disorders of lipoprotein metabolism and other lipidaemias: E78
- 8 Chronic lower respiratory diseases: J40-J44
- 9 Malignant neoplasms: C00-C97
- 10 Transient cerebral ischaemic attacks and related syndromes: G45-G46

Because GP data are far from being perfect<sup>19</sup>, it would not be wise to evaluate prevalence ratios calculated from them on their own, or to use them for cross-national comparison. Instead, emphasis will be laid on the relative importance (order, difference and ratio) of prevalence indicators for certain diseases, by gender and age group.

It follows from our way of selecting the top ten diseases that the relative frequency of almost each of them increases with age. The exceptions are:

<sup>17</sup> In 2003 the monthly nominal pension (including similar provisions) was 50,428 HUF per person amounting to 56.8% of the average net nominal earnings in Hungary. 30.2% of the total population benefited and the total amount of pension payments amounted to 10% of Hungarian GDP. In January 2004, the minimal pension was 23,200 HUF per month (less than EUR 100). Source: *Hungarian Statistical Yearbook 2003*. Budapest, KSH, 2004: 156, 161.

<sup>18</sup> *Egészségügyi statisztikai évkönyv. (Yearbook of Health Statistics.)* 2003. KSH, Budapest, 2004.

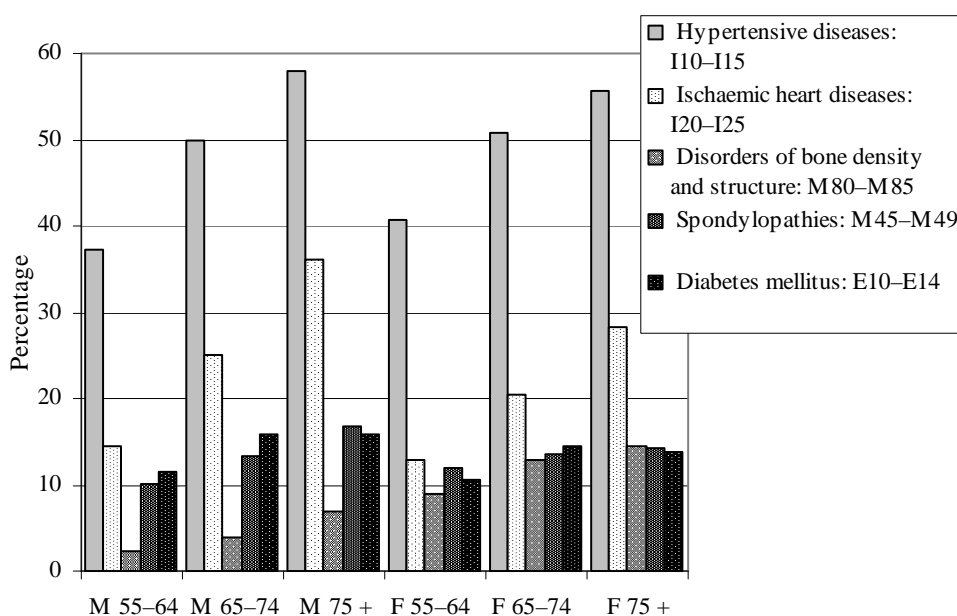
<sup>19</sup> „Data providers are not motivated in supplying accurate data. This is likely to have adverse effect on the quality of the database.” Hoffer 2004. 4–11.

diabetes mellitus and disorders of lipoprotein metabolism and other lipidaemias. Their prevalence is smaller among the 75+ than in the 65–74 age bracket, and this holds for women and men alike.

Hypertensive disease is the most frequent ailment among those who visit GPs. It occurs two-three times more often than ischaemic heart disease which ranks second. Prevalence rates of these two most widespread illnesses in the 55–64 and 65–74 age groups will be compared to the results derived from a more recent source: *the network of sentinel stations based in primary care facilities* (Hungarian abbreviation: *HMAP*). *HMAP* was established in 1998 in four Hungarian counties and extended to two more counties in 2001. The great advantage of the network is the use of standardised protocols and methodology and therefore the possibility of valid and internationally comparable morbidity analyses by particular diseases (Széles et al. 2003 and 2005, [www.publichealth.hu](http://www.publichealth.hu)).

Comparing data obtained from *NSDCP* and *HMAP*, most male prevalence rates of hypertension look higher while female rates lower in *NSDCP* than *HMAP* estimates in all but one of the six counties. Differences vary by age, sex and the region concerned. Largest *NSDCP* surplus (+30%) was found in male prevalence in county Bács-Kiskun, with regard to both age groups studied. *NSDCP* shortfalls were smaller (down to –15%) without any specific regional or age bias discernable. A similar comparison for ischaemic heart diseases revealed overall and much larger *NSDCP* excesses. No underestimation was found, and overrates fell largely within +20% and +80%.

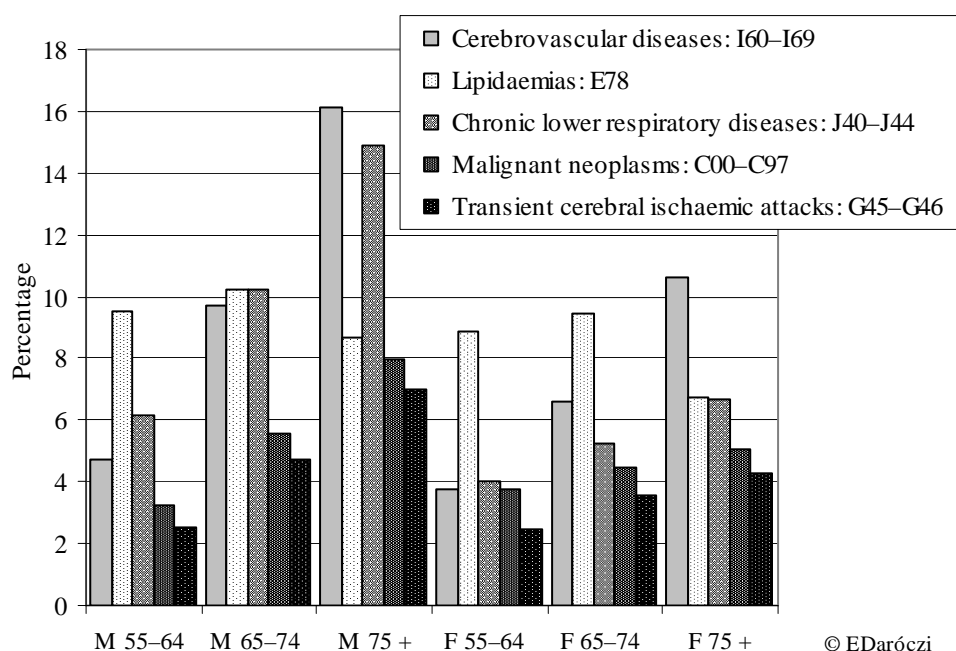
Figure 21  
*Prevalence Rates of Major Diseases Registered by GPs  
 by Age and Sex, Hungary, 2003 (a)*  
 (M = Male, F = Female)



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Data from Health Statistical Yearbook 2003. Budapest CSO.

Figure 22  
*Prevalence Rates of Major Diseases Registered by GPs  
 by Age and Sex, Hungary, 2003 (b)*  
 (M = Male, F = Female)



Data from Health Statistical Yearbook 2003. Budapest CSO.

The above results can by no means be projected to the other eight diseases studied but underline the caution by which they should be handled. In the next sections all data are taken from *NSDCP* and refer to national averages.

Just like in the case of excess male mortality, excess male morbidity prevails in several diseases and age groups presented (Figures 21 and 22). This is conspicuously evident in the highest age group. Men aged 75+ seem to be more affected than women of the same age by nine out of the ten diseases, in spite of the fact that the average age of men in this age group is lower than that of women. Male/female ratios among the 75+ range between 2.25 (chronic lower respiratory diseases) and 0.47 (disorders of bone density and structure). The latter is the only disease in the case of which women show worse figures. Male/female ratio of bone disorder prevalence goes down to 0.31 and 0.24 in ages 65-74 and 55-64 respectively. The next smallest male/female ratios can be found among the elderly aged 55-64: 0.85 and 0.86, represented by spondylopathies and malignant neoplasms. Besides chronic lower respiratory diseases, cerebrovascular disorders display considerably larger (at least +25%) male than female prevalence rates in all three age groups represented.

*Male/Female  
 Ratio*

For most diseases not mentioned so far, male/female morbidity ratios remain within a narrow margin in the 55-64 and 65-74 age groups. They range between 0.91 (hypertensive diseases) and 1.09 (diabetes mellitus), indicating no excess male morbidity. Ischaemic heart diseases and transient cerebral ischaemic attacks occur, nevertheless, remarkably more frequently among men than women, not only among the oldest but also in the 65-74

*age group* where male/female ratios are 1.22 and 1.33 respectively. The least difference between elderly men and women concerning the prevalence of the ten diseases can be found in pre-retirement age (55–64).

### *Age Gradient*

Age gradients – understood as the ratio of prevalence rates in two neighbouring age groups, the older being divided by the younger – vary widely by gender and type of disease. Not surprisingly, age gradients are steeper among men than among women in almost all cases. Morbidity rates of cerebrovascular diseases are more than twice as high *among men* aged 65–74 than among their younger counterparts (55–64 years of age). Multipliers over 1.50 apply between these two male age groups in five more diseases (in decreasing order: transient cerebral ischaemic attacks, bone density and structure, ischaemic heart diseases, malignant neoplasms, and chronic lower respiratory diseases). Somewhat milder increases (1.30–1.37) appear in spondylopathies, hypertensive diseases, and diabetes mellitus while the ratio is as low as 1.07 in lipidaemias.

Comparing *female morbidity levels in age groups 65–74 and 55–64*, the order of diseases ranked by age gradient is similar to that of men. Cerebrovascular diseases lead the line (1.77), followed by ischaemic heart diseases (1.60). Ratios of five other diseases array between 1.25 and 1.44 (in decreasing order: transient cerebral ischaemic attacks, bone density and structure, diabetes, chronic lower respiratory diseases, and hypertension). Malignant neoplasms and spondylopathies are 1.20 and 1.14 times more frequent in women *aged 65–74* than among those *between 55 and 64*.

Relative differences in morbidity levels between the *two highest age groups (75+ over 65–74)* are smaller than between those (*55–64 and 65–74*) discussed above. Nevertheless, the prevalence of cerebrovascular diseases continues to increase rapidly in both sexes from 75 onwards, reaching 1.66 times higher frequency than among the 65–74 year old in males and 1.61 times in females. As for ischaemic heart diseases, the relevant figures are 1.44 in men and 1.37 in women. Male gradients at the highest ages are steeper than female slopes in malignant neoplasms, transient cerebral ischaemic attacks, and chronic lower respiratory diseases. The relevant figures are: 1.44 versus 1.11; 1.47 versus and 1.20; 1.46 versus 1.27. As already mentioned, diabetes and lipidaemias are less frequent in the 75+ than in the next younger age group. Declines are larger in women than in men.

### **National Health Interview Surveys (NHIS)**

During the post-transition period, as a preparation for EU membership, a new health survey program (in Hungarian: Országos Lakossági Egészségfelmérés, *OLEF*)<sup>20</sup> was commissioned by the Hungarian Ministry of Health, Social and Family Affairs (now Ministry of Health, [www.eum.hu](http://www.eum.hu)) within the framework of the National Public Health Program. This survey follows international standards in health monitoring methodology, has the explicit aim to introduce a series of regular, periodically repeated health surveys in this country, and to foster the

<sup>20</sup> The analysis of *NHIS 2003* survey data is still in process. I wish to thank the whole *NHIS 2003* team and particularly Julianna Boros, Krisztián Görög, Nóra Hermann, Zsuzsanna Kéki and Renáta Németh for their permission to use, for the purposes of the present paper, all materials included in their presentations at the Health Information Forum (Budapest, November 17, 2005), now also available at [www.ock.hu](http://www.ock.hu).

practical use of the results thereof (Boros, Németh and Vitrai 2002). So far two rounds have been realised (*NHIS 2000* and *NHIS 2003*), designed and supervised initially by the Health Development Research Institute (Egészségfejlesztési Kutatóintézet) and from 2001 by the Béla Johan National Center for Epidemiology (Johan Béla Országos Epidemiológiai Központ, [www.oek.hu](http://www.oek.hu)).

Both surveys were based on random samples of 7,000 persons representing non-institutionalized adult (18+) population by age, sex, region, and settlement size (cross-section samples). Both rounds were made during the last two-three months of the given year. In 2000 interviews and self-administered questionnaires were completed with 5,503 individuals in 440 settlements while in 2003 with 5,072 persons in 447 settlements (Boros, Németh and Vitrai 2002; Boros, Csizmadia et al. 2004).

The following section is restricted to a few functions and diseases included in *NHIS* which are particularly relevant for the health of the elderly. Since data processing of *NHIS 2003* has not yet been completed, we can only occasionally refer to changes between 2000 and 2003.

In *NHIS 2000* questionnaire items 12–13 asked about vision impairment and item 11 about hearing impairment on scales of 0 to 3:

### *Vision and Hearing*

#### *Vision problems*

*None:* Can recognise a person he/she knows across the road.

*Mild:* Can only recognise a person he/she knows across the road if wearing glasses or contact lenses.

*Moderate:* Can only recognise a person he/she knows at arm's length.

*Severe:* Unable to recognise a person he/she knows at arm's length.

#### *Hearing problems*

*None:* Can listen to the TV or radio at normal volume.

*Mild:* Can only listen to the TV or radio at high volume.

*Moderate:* Can only listen to the TV or radio with hearing aid.

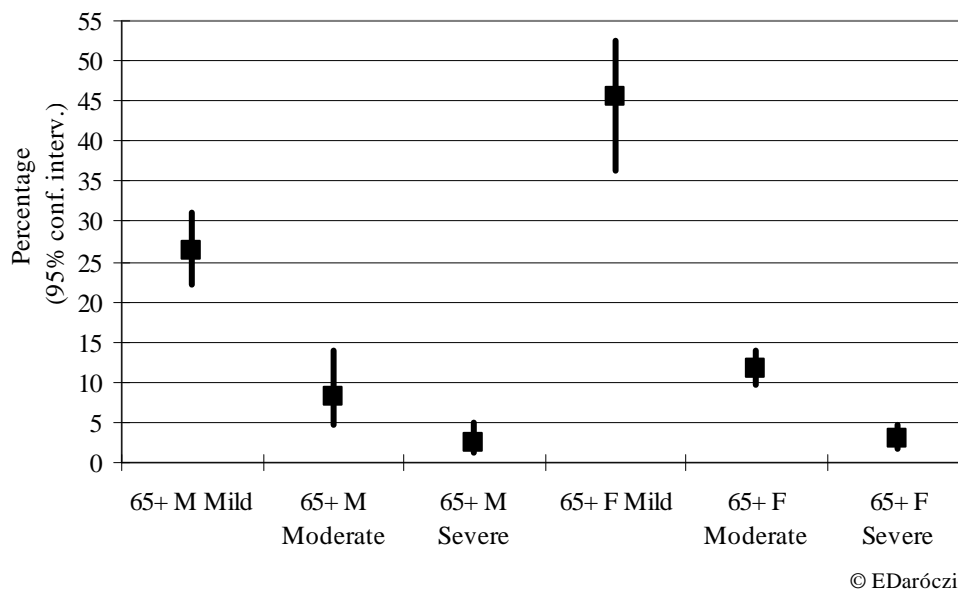
*Severe:* Unable to listen to the TV or radio due to hearing difficulties.

The following figures display population estimates within 95% confidence intervals of vision and hearing impairment prevalence rates among the elderly as defined and measured by *NHIS 2000*.

Vision difficulties are more frequent than hearing problems and gender gap is larger in visual than in audio capacity. Women's vision problems emerge earlier and increase more rapidly with age than men's. Age gradient of hearing impairment is, however, even steeper than that of vision, particularly among women.

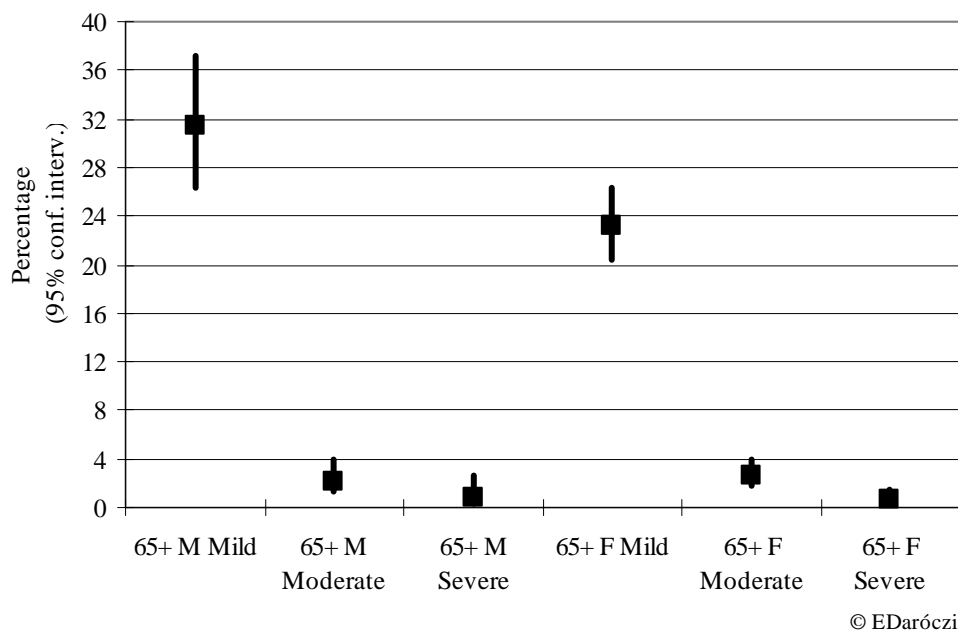
The prevalence of moderate and severe cases of visual problems taken together amounts to 10.6% in men and 14.5% in women aged 65+. It is worth recalling that the 2001 census recorded merely an average of 2.2% male and 2.6% female population 65+ with visual impairment (Figure 18). These percentages seem to correspond to the prevalence of severe visual difficulties registered by *NHIS 2000*. But while the census was less sophisticated concerning degrees of impairment (see Footnote 14), in *NHIS* it is correctly defined what mild, moderate, or severe impairments cover.

Figure 23  
*Vision Impairment in the Elderly Population,*  
*NHIS 2000, Hungary*  
 (M = Male, F = Female)



Data from Vokó 2002a.

Figure 24  
*Hearing Impairment in the Elderly Population,*  
*NHIS 2000, Hungary*  
 (M = Male, F = Female)



Data from Vokó 2002a.

Moderate and severe hearing impairment combined add up to 3.1% in men and 3.3% in women aged 65+ according to *NHIS 2000*. These ratios are also higher than the 2001 census results which indicate – including speech difficulties – 2.4% among elderly (65+) male and 1.7% among elderly female population (Figure 18) but are not so much apart as it was the case with regard to vision.

Items 9–10 in *NHIS 2000* questionnaire use the following definitions for describing functional impediment:

*Functional Impediment*

*Severe impediment:* Another person’s help is needed to get up from bed.

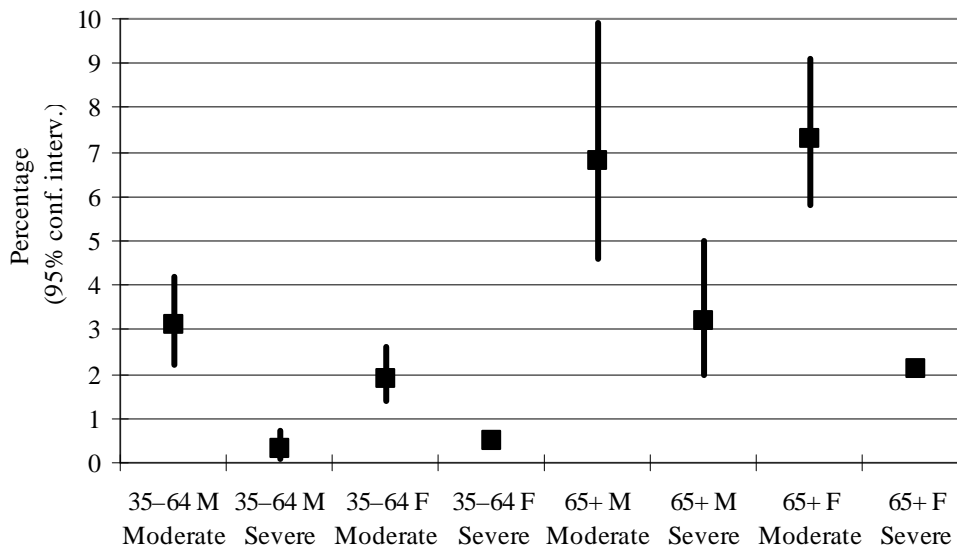
*Moderate impediment:* Another person’s help is needed in self-care or in communal activity but can get up from bed on his/her own.

*Mild impediment:* Lasting impediment but no help from another person is needed.

*Impediment:* No restriction but difficulties in self-care or mentally handicapped.

*No impediment, no restriction.*

Figure 25  
*Functional Impediment by Age and Sex,*  
*NHIS 2000, Hungary*  
 (M = Male, F = Female)



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Data from Vokó 2002a.

Moderate and severe functional impediments were found in 10.0% of elderly (65+) men and 9.4% of women but severe cases were more frequent in the elderly male (3.2%) than in elderly female (2.1%) population.

In the Executive Report on *NHIS 2003*, Boros, Csizmadia et al. (2004) demonstrated an increase in loss of functional capacities of older male and female population alike between 2000 and 2003. The authors found almost 4% prevalence of severe functional impediment among men and close to 3% among women in 2003.

Görög (2005) coined a complex indicator of scores measured in various functional capacities such as walking, going to and getting up from bed, sitting down and standing up, dressing and undressing, washing hands, eating, toileting, hearing, seeing and continence.

Respondents were classified into three categories according to their scores:

*Retained functional capacity* (did everything without difficulty);

*Moderate functional restriction* (at least one activity was found difficult);

*Severe functional restriction* (needed another person’s help at least in one activity).

It follows from the methodology used that Görög measured higher functional impediment prevalence rates among the middle aged and the elderly in *NHIS 2003* than what was presented above from *NHIS 2000*:

Table 8  
*Functional Restriction by Age and Sex, NHIS 2003,  
Hungary (percentages)*

Degree/Age	Men		Women	
	35–64	65+	35–64	65+
None	67	34	66	25
Moderate	28	44	28	50
Severe	5	22	6	25
Total	100	100	100	100

Data from Görög 2005.

It is worth noting that while middle-aged men and women have almost exactly the same distribution by functional capacities, women score worse among the elderly. This can be, at least in part, explained by structural differences among women 65+ (the more advanced level of double ageing and smaller selection effect among women). Nevertheless, it is rather alarming that every fifth man and every fourth woman aged 65 and above needs assistance at least in one basic function.

#### *Chronic Diseases*

In *NHIS 2000* questionnaire, item 16 named eight chronic diseases.<sup>21</sup> Respondents were to mark those which applied in their case either in the past or at present, provided that the disease concerned had been diagnosed by a medical doctor (according to self-declaration). It was indifferent if the respondent was actually treated or not for the disease concerned at the time of the interview.

Chronic diseases were listed in the following order:

- 1 *High blood pressure*
- 2 *Heart attack or MCI*
- 3 *Any other heart disease*
- 4 *Cerebral haemorrhage, stroke, cerebral spasm (excluding cerebral sclerosis)*
- 5 *High cholesterol level*
- 6 *Diabetes*
- 7 *Asthma (only lung asthma)*
- 8 *Allergic diseases*

From among circulatory diseases, Figure 26 shows population estimates (within 95% confidence intervals) of high blood pressure and stroke prevalence rates in the middle and old ages measured by *NHIS 2000*. Hypertension is more frequent among women and stroke among men in both age groups. Age gradient of high blood pressure is steeper among women

<sup>21</sup> Items 17–18 inquired about injuries and poisoning, item 22 about liver diseases, items 23–24 about pains in the neck, back and waist, item 25 about joint gout, and item 27 about the state of mind and spirit.

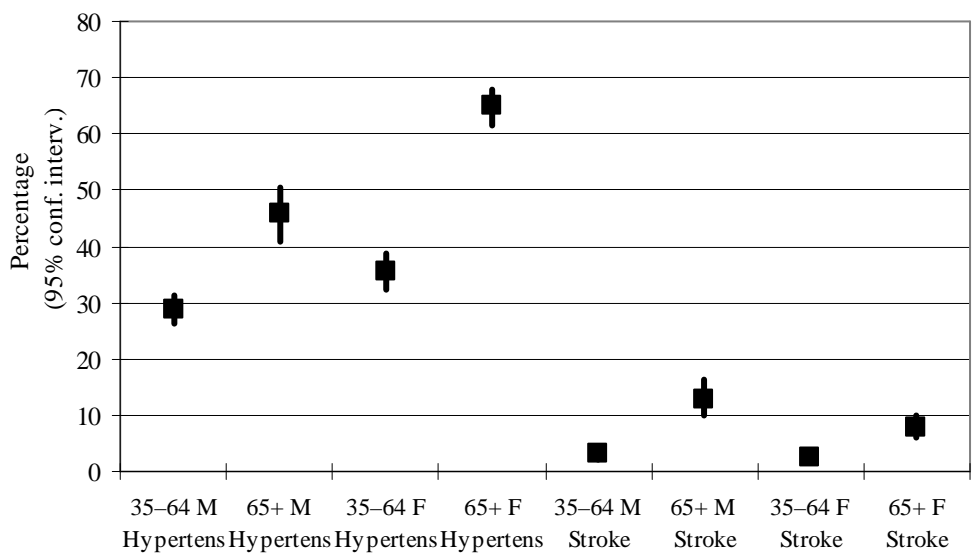


than men (1.83 versus 1.59) while in the case of stroke it is the other way round (4.13 for men and 3.21 for women).

*NHIS 2000* found high cholesterol level in 18.2% of elderly (65+) female and 12.1% of elderly male population. It is more than appalling that life-prevalence rates of at least one MCI are not much smaller: 11.1% among women and 14.2% among men aged 65+.

Population estimates of combined prevalence rates among the middle aged and the elderly of all circulatory diseases included in the *NHIS 2000* questionnaire (AMI, stroke, other heart diseases, high blood pressure) and those of diabetes are presented in Figure 27. Diseases of the circulatory system are more frequent among women than among men in both age groups while female prevalence of diabetes is only higher than male prevalence in the oldest age group. Age gradient of circulatory disease prevalence is practically the same among women and men (1.73 versus 1.80) but the frequency of diabetes increases more rapidly with age among females (2.76 versus 1.77 in elderly males).

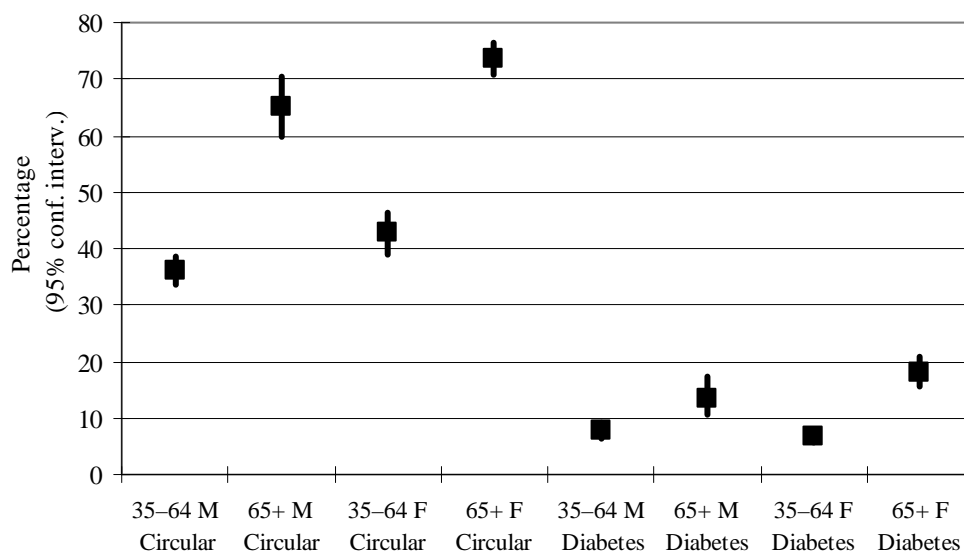
Figure 26  
*Prevalence of Hypertensive Diseases and Stroke*  
*by Age and Sex, NHIS 2000, Hungary*  
(M = Male, F = Female)



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Data from Széles 2002.

Figure 27  
*Prevalence of Circular Diseases and Diabetes*  
*by Age and Sex, NHIS 2000, Hungary*  
(M = Male, F = Female)



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Data from Széles 2002.

Item 11 in *NHIS 2003* questionnaire inquired about the life-prevalence of 15 chronic illnesses or states. The formulation of this item was more elaborate than in *NHIS 2000*: “Do you have or have you ever had such a disease? Was it a medical doctor who diagnosed this disease? Have you had this disease during the last 12 months? Have you taken medication or have you received treatment for this disease during the last 12 months?” It was also possible to indicate any other disease or complaint besides the ones listed by name.

Table 9 includes a sketchy outline of the frequency rank of 15 chronic diseases included in *NHIS 2003* questionnaire based on a diagram taken from Hermann’s presentation (2005) on the elderly. Diseases are listed in decreasing order of their prevalence among women.

Table 9  
*Prevalence Rates of Chronic Diseases or States*  
*within Population Aged 65+, Based on NHIS 2003*  
(Ranked by Female Values)

	Women	Men
	Approximate values (%)	
1 High blood pressure	60	45
2 Arthritis, rheumatoid arthritis	51	37
3 Any other heart disease	36	19
4 Disorders of bone density	25	5
5 High cholesterol level	21	10
6 Diabetes	17	18
7 Anxiety or depression	15	5
8 Migraine or frequent headache	11	2
9 Allergic diseases (hay fever, eczema)	11	4
10 Gastric or duodenal ulcer	6	6
11 Asthma	6	7
12 Chronic bronchitis, lung emphysema	6	10
13 Heart attack, MCI	5	5
14 Cerebral haemorrhage, stroke, cerebral spasm	4	5
15 Malignant neoplasm	2	3

After Hermann 2005.

Comparing frequencies reported by *NHIS 2000* and *NHIS 2003* of the few diseases selected for the purposes of the present paper, one can find surprising improvements in the prevalence of stroke and hypertension. Within this short period of time, population estimates of stroke prevalence decreased to one third among men aged 65+ and to the half in women of the same age group. This sudden fall may result from changes in the composition of the elderly, differences in willingness to provide correct answers but the direction of change is very clear. As for high blood pressure, a notable five percentage point decrease can be detected. In case of diabetes, some improvements can be revealed in the female elderly population but the situation among men aged 65+ has not changed. It is justified to presume that these processes started prior to 2000 and largely contributed to increases in life expectancies at high ages around the millennium (Daróczy 2000, 2003; Daróczy and Kovács 2004).

In cross-section surveys the composition of samples changes over time and causal relationships cannot be established. Longitudinal or panel surveys can provide more valuable information, but they also cost a lot more in terms of money, time and effort. Continuous contact with panel participants is essential. This is why the Hungarian “*Turning Points in Life-Course*”<sup>22</sup> (in Hungarian: ‘*Életünk fordulópontjai*’ társadalmi demográfiai panelfelvétel) – presently the most significant in its genre in Hungary – deserves particular attention. It was initiated and has been co-ordinated by the Demographic Research Institute ([www.demografia.hu](http://www.demografia.hu)) of the Hungarian Central Statistical Office with the aim of exploring ongoing demographic changes and motivations behind them.

The first wave was realised in the winter months of 2001/2002.<sup>23</sup> The questionnaire was completed with 16,363 individuals aged 18–75, 20% of whom were at least 60 year old at the time (Spéder 2002; Kapitány 2003; Dobossy, S. Molnár and Virágh 2002, 2003). The questionnaire covered 12 topics:

- 1 Family and household;
- 2 School and work;
- 3 Personal opinions and attitude;
- 4 Childhood;
- 5 Marriage and partnership;
- 6 Satisfaction and worries;
- 7 Family policy, family planning and raising children;
- 8 Planning retirement (only from the middle aged);
- 9 Life in retirement (only from the retired),
- 10 Support to and from family and friends;
- 11 Financial situation and housing;
- 12 Health.

The section on health included six items. For the purposes of the present paper three of them will be reviewed:

- Q. 138 Are you restricted in your daily activities by any health problem, illness, or disability?

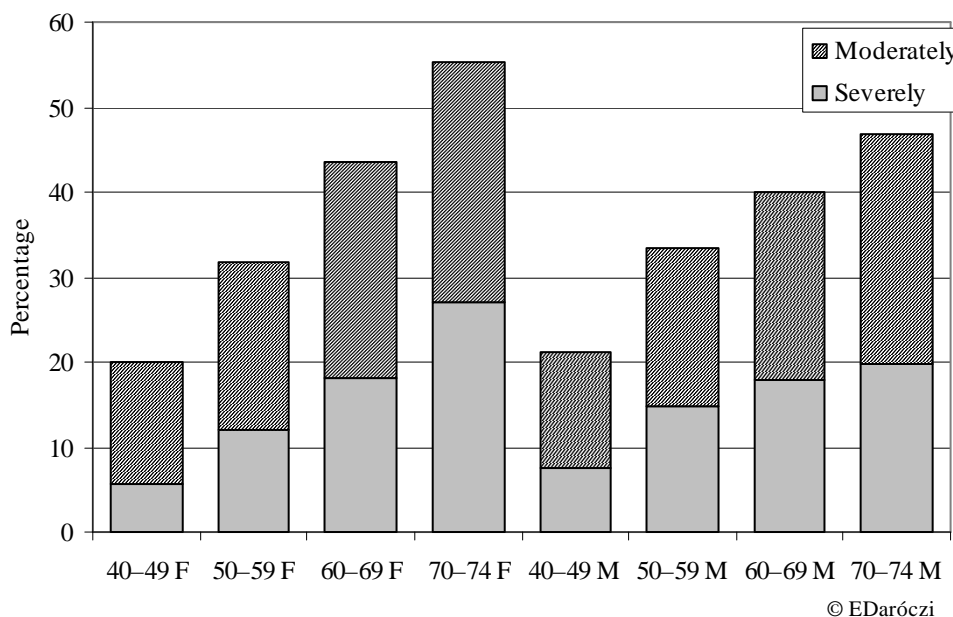
<sup>22</sup> For further details consult [www.dpa.demografia.hu](http://www.dpa.demografia.hu).

<sup>23</sup> Data analysis of the second wave (2004/2005) is in progress.

### **Turning Points of the Life-course, the Hungarian Generation and Gender Survey (HGGS)**

- Yes/No. If yes, to what extent (Seriously, Moderately, It Depends/Varies, Does not know)
- Q. 139 Do you regularly take any medicament prescribed by a doctor due to illness? (Yes/No, Does not know)
- Q. 140 Please indicate on a scale from 0 to 10 how much you are satisfied with your health status (0 = Not at all; 10 = Fully).

Figure 28  
*Percentage of People Restricted in Daily Activities by Health Problems by Age and Sex, DPA 2001/2002 Hungary*  
 (F = Female, M = Male)

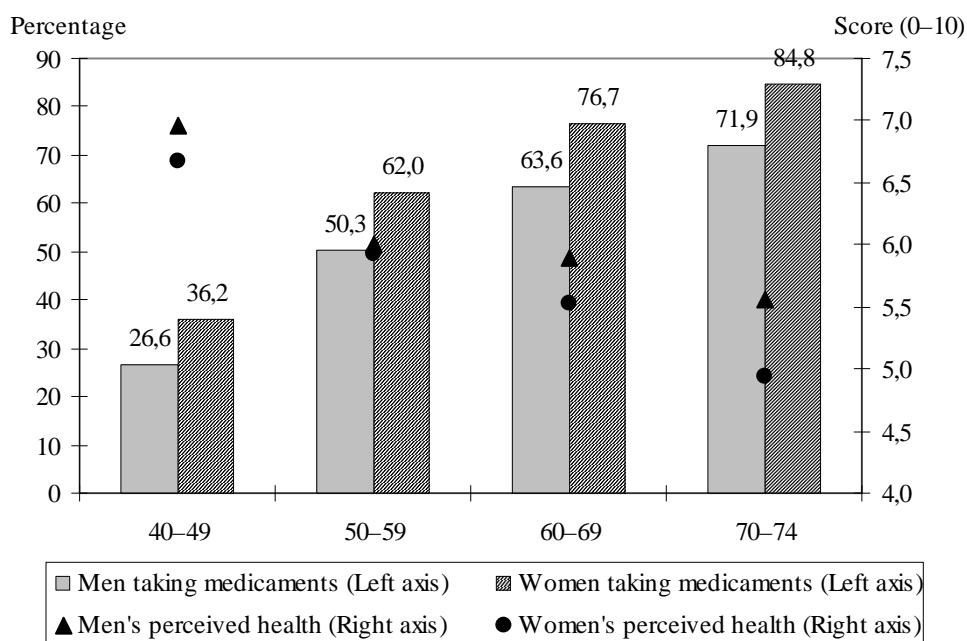


Data from Dobossy, S. Molnár and Virágh 2003.

Prevalence of functional restrictions is similar among women and men aged 40–49 and 50–59, though serious restrictions are more frequent in the group of males. From age 60 onwards women’s health seems to deteriorate more rapidly than men’s. Ratios of moderate restriction start to increase earlier (in the age group of 70–74) than that of severe restriction. This is in line with the process of vision impairment discussed above: female visual difficulties start at younger ages (though less dramatically) and progress more rapidly with age than it is the case with men. Similar conclusion could be drawn from data included in Table 8. Furthermore, prevalence ratios of severe restrictions at 65+ presented in Table 8 (20–25%) are comparable with those of Figure 28.

Figure 29

*Percentage of People (a) Regularly Taking Prescribed Medicaments and (b) Scores of Perceived Health by Age and Sex, DPA 2001/2002, Hungary*



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Data from Dobossy, S. Molnár and Virágh 2003.

Subjective health evaluations support the above statements. In their fifties, men and women have similar perception of their own health but from age 60 onwards the gender gap increases (Figure 29), men score their health higher. The figure also touches upon another aspect of ageing and health, medication. High percentages of elderly who regularly take medicaments prescribed by doctor not only indicate their ill health but also the heavy financial burden on elderly people. Transition involved large-scale privatisation and market prices have been introduced also in the health sector. At the same time the relative contribution of health insurance to the rocketing prices has drastically decreased. Pension adjustments lag far behind and an increasing number of old people cannot afford efficient drugs or only to the detriment of other vital needs.

Besides the items included in section 12 of *HGGS* questionnaire on health, items concerning worries about the future and getting old (item 96 in Section 8 and item 110 in Section 9) perfectly suit our subject (Table 10).

It is very clear that concerns about health are the most often mentioned, preceding those about material situation, loneliness and particularly family relationships. This is perhaps not surprising in the case of elderly people but the authors compared these results with worries of the middle aged (46+ and economically active). They have found that ratios are not significantly different. Both groups are most worried about the future and health of their children, their own health and subsistence. "It is interesting that economically active respondents aged 45+ are not less anxious about subsistence than those who are retired. The difference is also small (6 percentage points) between the two groups of respondents concerning their worries about their own health, though the majority of active middle aged worry 'a little' and most retired people worry 'a lot'." (Op. cit. p. 91)

Table 10  
*Worries among the Retired in Hungary (DPA 2001/2002)*

Thinking of your future and getting old, how much do you worry ...	A lot	A little	Not at all	Does not know	Total
About your own health?	47.7	38.3	13.7	0.3	100.0
If you have a family: about the health of your family?	45.2	34.5	10.3	10.0	100.0
If you have child/ren: about the life, subsistence, security of your child/ren?	47.8	30.0	9.5	12.7	100.0
About subsistence?	36.1	40.8	22.7	0.4	100.0
About your mental degradation?	23.6	44.0	31.5	0.9	100.0
About widowhood, remaining alone?	26.9	21.2	17.5	34.4	100.0
About lack of activities, feeling idle?	9.2	24.2	65.8	0.8	100.0
If you have child/ren, grandchild/ren: about your weakening relationship with them?	12.6	18.4	55.3	13.7	100.0
If you have a spouse/partner: about future problems in your relationship?	4.2	8.4	52.3	35.1	100.0

Data from Dobossy, S. Molnár and Virágh (2002: 92).

## 6 Conclusions

Population ageing appears to be at an advanced stage in the transition countries of Europe when all people aged 65+ are related to the total population. But double ageing, the proportion of the oldest old within the group of elderly, lags behind the three non-transition countries selected for comparative purposes, particularly in the case of females. Smaller differences in men's double ageing between the two groups of countries are supposed to be the consequence of very high mortality in the middle age groups, i.e. selectivity, among the male population.

In contrast with the long-standing fertility decline, falling old-age mortality is a more recent component of demographic ageing in the transition countries of Europe. The decline in old-age mortality became evident first among females, as in other countries. The calendar year from which female life expectancy at age 65 constantly surpassed its 1960 level by at least one year was 1972 in Finland, 1976 in Slovenia, and 1977 in Austria and Portugal. In Poland, the Czech Republic, Slovakia and Hungary, this moment was deferred to dates between 1981 and 1991, and in Romania, to 2001; in Bulgaria, it is yet to come. The time series available for the Baltic countries are shorter. From 1986 onwards, in Estonia and Latvia the absolute changes in female life expectancy at age 65 are similar to developments in Slovakia and Hungary, while the Lithuanian trend is closer to Romania's and Bulgaria's.

Male old-age mortality has shown less improvement. Slovenia surpassed its 1960 level of male life expectancy at age 65 by at least one year as late as 1988, the Czech Republic in 1998 and Poland in 2001. This has still not occurred in Slovakia, Hungary, Bulgaria and Romania or (to judge from their post-1986 trends) in the Baltic States.

The figures presented above show that the decline in life expectancy at birth during the turbulent years of the early 1990s was not solely due to increased mortality levels during the working ages; life prospects in old age

were also affected. The downturns were more pronounced in the post-Soviet States than in other transition countries and were steeper for men than women. However, improvements from the mid- or late 1990s onwards also point to a new, swifter process of demographic ageing.

Healthy life expectancy at age 60 could be examined at one point in time, specifically 2000–2001, when the East–West divide was no longer definite. In Austria, Finland, Portugal, Slovenia and the Czech Republic, men and women can expect to live longer in good health, with an average of 12.8–15.7 years for men and 16.0–18.5 years for women. In contrast, in the other eight transition countries, healthy life expectancy at age 60 was in the range of 10.0–11.9 years for men and 13.5–15.0 years for women. There was a positive correlation cross-nationally between the total number of additional years to be expected at age 60 and the percentage expected to be spent in good health. In several countries elderly men spend larger portions of their total life expectancies in good health than women while in several others it is the reverse.

In the post-transition group, only Slovenia seems to have completed the cardio- and cerebro-vascular revolution. In Estonia, Latvia, Poland, the Czech Republic and Hungary, the levels of SDR due to circulatory system diseases have improved but remain high. Little or no progress has been made in Lithuania, Slovakia, Romania and Bulgaria. As for malignant neoplasms, only Finland and Austria achieved substantial improvements in old-age mortality for both males and females. In all other countries, including Portugal, the levels either stagnated or increased.

In the Baltic States for older males, particularly in Estonia, SDRs due to external causes rose sharply between 1985–1987 and the mid- or late 1990s, and then stagnated. In the Czech Republic, Hungary and Slovenia, on the contrary, the previously high levels of old-age mortality due to external causes were significantly reduced for both men and women.

In summary, abrupt changes in old-age mortality appear to be over in the transition countries of Europe, where recent improvements in the health of the older population are likely to continue. However, the pace and rhythm of the process may vary in ways that are hard to predict, depending on underlying socio-economic, cultural and political factors.

Ageing in Hungary has reached an advanced level and will progress in the future. Several circumstances point in this direction, including the low and stagnating levels of fertility, the relatively large cohorts born in the mid-1950s who will soon enter old age, the low level of net in-migration, and the increases in life expectancy.

In spite of recent improvements, mortality and morbidity conditions of the older (and also the middle-aged) population are far worse than they should be at the actual level of Hungarian living standards, expressed in GDP per capita. In this sense, policies should be pursued with the aim of optimising human and financial resource allocation, increasing efficiency in education and health management, expanding access to health services, improving environmental conditions and changing lifestyles.

There have been some positive developments. The expansion of preventive measures (measuring blood pressure, level of cholesterol, diabetes, weight control and mobility, and anti-smoking measures) has brought results. It is promising that those entering old age in the future will

have more education, and that the number of the very poor can be expected to decline.

However, while the political and economic transition provided an impetus to civil, charitable and religious organisations to help the needy, the prospects for the older population, particularly regarding their health, have been of increasing concern. The health sector has experienced extremely difficult situations wherein medical and paramedical personnel are generally overburdened yet underpaid. Formal care is not readily accessible to everyone due to spatial, temporal or financial constraints. In particular, financing long-term care either from private or from government resources seems problematic. At the same time, fewer relatives are expected to be available to older people in the future to provide informal care.

Documented scientific knowledge about health and morbidity of the population has been increasing in Hungary, and important steps have been made to raise awareness of these problems. Within the limits of the present paper, which was restricted to regular statistics and to a selected group of nationally representative studies containing information on the health of older people, it was possible to portray a reasonably comprehensive picture of the distressing health conditions of the aged in Hungary.



## References

- Andorka, R. (1978). *Determinants of Fertility in Advanced Societies*. New York: Free Press.
- Arnaudova, A. and Charpak, Y. (eds.) (2004). *10 Health Questions about the 10*. WHOLIS E82865. WHO Europe. [www.euro.who.int](http://www.euro.who.int)
- Bobak, M. and M. Marmot (1996). "East–West mortality divide and its potential explanations: proposed research agenda", *British Medical Journal* 312: 421–425.
- Bobak, M., H. Pikhart, R. Rose, C. Hertzman and M. Marmot (2000). "Socioeconomic factors, material inequalities, and perceived control in self-rated health: cross-sectional data from seven post-communist countries", *Social Science & Medicine* 51: 1343–1350.
- Boros, J., Németh, R. and Vitrai, J. (eds.) (2002). Országos Lakossági Egészségfelmérés. *OLEF2000. Kutatási jelentés (National Health Interview Survey. NHIS 2000. Research Report)*. Budapest, National Centre for Epidemiology. [www.oek.hu](http://www.oek.hu)
- Boros, J. and Vitrai, J. (2004). Országos Lakossági Egészségfelmérés. *NHIS 2003. Kutatási terv (National Health Interview Survey. NHIS 2003. Research Design)*. Budapest, National Centre for Epidemiology, [www.oek.hu](http://www.oek.hu), and the National Institute for Food Safety and Nutrition. [www.oeti.hu](http://www.oeti.hu)
- Boros, J., Csizmadia, P., Hermann, D., Kéki, Zs., Kiss, G. Németh, R., Ország, S., Vitrai, J., Vizi, J. and Zakariás I. (2004). *National Health Interview Survey 2003 – Hungary. Executive Update*. Budapest, Johan Béla National Center for Epidemiology. [www.oek.hu](http://www.oek.hu)
- Carlson, P. (1998). "Self-perceived health in East and West Europe: Another European health divide?", *Social Science & Medicine* 46: 1355–1366.
- Caselli, G. and A.D. Lopez (eds.) (1996). *Health and Mortality among Elderly Populations*. Clarendon Press. Oxford.
- Csizmadia, P. (2003). A középkorúak egészsége az *OLEF2000* eredményei alapján (Health of the middle aged. *NHIS 2000*). In: Daróczi (ed.): *Kettős szorításban (Double Constraint)* NKI Kutatási Jelentések 74. Budapest, KSH NKI: 87–104.
- Daróczi, E. (1988). *A halandóság területi eltérései Magyarországon (Regional Patterns of Mortality in Hungary)*. Dissertation (Karl Marx University of Economics, Budapest).
- Daróczi, E. and Spéder, Zs. (eds.) (2000). *A korfa tetején (On Top of the Age Pyramid)*. NKI Kutatási Jelentések 64. Budapest, KSH NKI.
- Daróczi, E. (2000). Az idősek halandósága Magyarországon 1954–1999 (Old Age Mortality in Hungary, 1954–1999). In: Daróczi, E. and Spéder, Zs. (eds.): *A korfa tetején (On Top of the Age Pyramid)*. Budapest: NKI Kutatási Jelentések 64. Budapest, KSH NKI: 131–151.
- Daróczi, E. (ed.) (2003). *Kettős szorításban. A középkorúak élete és egészsége (Double Constraint. The Life and Health of the Middle Aged)*. Budapest: KSH NKI Kutatási Jelentések 74, 2003/3.
- Daróczi, E. (2003a). A középkorúak halandósága nemek és főbb halálokok szerint (Mortality of the middle aged by sex and major causes). In: Daróczi, E. (ed.): *Kettős szorításban (Double Constraint)*. NKI Kutatási Jelentések 74. Budapest, KSH NKI: 105–124.
- Daróczi, E. (2003b). Deviation from epidemiological transition. The case of Hungary. In: I.E. Kotowska and J. Józwiak (eds.): *Population of Central and Eastern Europe: Challenges and Opportunities*. European Population Conference, Warsaw, 26–30 August 2003. Statistical Publishing Establishment, Warsaw: 351–368.
- Daróczi, E. and Kovács, K. (2004). *Halálzási viszonyok az ezredfordulón: társadalmi és földrajzi választóvonalak (Mortality at the Millennium: Social and Regional Divides)*. NKI Kutatási Jelentések 77. Budapest: KSH, NKI.

- Daróczi, E. (2004). A várható élettartam Magyarországon európai összehasonlításban (Hungarian life expectancies in a European perspective). In: Daróczi, E. and Kovács, K. (eds.): *Halálórási viszonyok az ezredfordulón: társadalmi és földrajzi választóvonalak (Mortality at the Millennium: Social and Regional Divides)*. NKI Kutatási Jelentések 77. Budapest, KSH, NKI: 41–74.
- Daróczi, E. (2005). Esélyek 30 és 60 között. (Life expectancy between 30 and 60.) *KorFa* 2005/1: 1–3. [www.demografia.hu](http://www.demografia.hu).
- Dobossy, I., S.Molnár, E., Virágh, E. (2002). Öregedés – nyugdíjba lépés, nyugdíjas lét – öregkor (Ageing – retirement, retired life – old age). In: Spéder, Zs. (ed.): *Demográfiai folyamatok és társadalmi környezet (Demographic Processes and Societal Environment)*. NKI Műhelytanulmányok 1., Budapest, KSH NKI: 73–95.
- Dobossy, I., S.Molnár, E., Virágh, E. (2003). *Öregedés és társadalmi környezet (Ageing and Societal Environment)*. NKI Műhelytanulmányok 3. Budapest, KSH NKI.
- EC and WHO (2002). *Health Status Overview for Countries of Central and Eastern Europe that Are Candidates for Accession to the European Union*. E76888. [www.euro.who.int/InformationSources/Evidence](http://www.euro.who.int/InformationSources/Evidence).
- European Opinion Research Group (2003a). *The Health of Adults in the European Union*. Special Eurobarometer 183-7 / Wave 58.2. [http://europa.eu.int/comm/health/ph\\_information/documents](http://europa.eu.int/comm/health/ph_information/documents).
- European Opinion Research Group (2003b). *The Mental Health Status of the European Population according to the Eurobarometer Survey 2002*. Eurobarometer 58.2. [www.europa.eu.int/comm/health/ph\\_information/documents](http://www.europa.eu.int/comm/health/ph_information/documents).
- Figueras, J., M. McKee, J. Cain and S. Lessof (editors) (2004). *Health systems in transition: learning from experience*. European Observatory on Health Systems and Policies. [www.observatory.dk](http://www.observatory.dk).
- Gárdos, É. (2003). A népesség egészségére vonatkozó információk kritikai értékelése (A critical assessment of public health information). In: Daróczi, E. (ed.): *Kettős szorításban (Double Constraint)*. NKI Kutatási Jelentések 74. Budapest, KSH NKI: 13–18.
- Gaudi, I. (2003). A Nemzeti Rákregiszterről (On National Cancer Register). In: Daróczi, E. (ed.): *Kettős szorításban (Double Constraint)*. NKI Kutatási Jelentések 74. Budapest, KSH NKI: 19–32.
- Golovakha, E. and Panina, N. (2003). “Post-Soviet Deinstitutionalization and Formation of New Social Institutions in Ukraine”, *Ukrainian Sociological Review*, Kyiv: Institute of Sociology: 12–34.
- Görög, K. (2005). *A magyar lakosság funkciócsökkenési mutatói az OLEF2003 adatainak elemzése alapján (Loss of Function Indicators. NHIS 2003)* National Centre of Epidemiology. Presentation at the Health Information Forum. Budapest, November 17, 2005. [www.oek.hu](http://www.oek.hu).
- Hablicsek, L. (2000). A népesség öregedése (Population Ageing) In: Daróczi, E. and Spéder, Zs. (eds.): *A korfa tetején (On Top of the Age Pyramid)*. NKI Kutatási Jelentések 64. Budapest, KSH NKI: 153–175.
- Hermann, D. (2005). *Krónikus betegségek előfordulása az OLEF2003 alapján (Prevalence of Chronic Diseases. NHIS 2003)* National Centre of Epidemiology. Presentation at the Health Information Forum. Budapest, November 17, 2005. [www.oek.hu](http://www.oek.hu).

- Hermann, D., Kéki, Zs. and Németh, R. (2004). *A hipertónia és az azt befolyásoló tényezők az OLEF2003 alapján (Hypertension and Its Factors. NHIS 2003)*. National Centre of Epidemiology. Presentation at the Health Information Forum. Budapest, November 17, 2005. [www.oek.hu](http://www.oek.hu).
- Hoffer, G. (2004). Morbiditás (Morbidity). In: *Népegészségügyi Jelentés 2004. (Public Health Report 2004)*. Johan Béla Országos Epidemiológiai Központ. [www.oek.hu](http://www.oek.hu).
- Józan, P. (1994). Epidemiológiai válság Magyarországon a kilencvenes években (Epidemiological crisis in Hungary in the 1990s). (Epidemiological crisis in Hungary in the 1990s" I., II.) *Statistikai Szemle* 72/1: 5–8, 72/2: 101–113.
- Józan, P. (2001). A századvég halálozási viszonyainak néhány jellegzetessége Magyarországon (Mortality patterns in Hungary at the end of the century). In: Cseh-Szombathy, L. and Tóth, P.P. (eds.): *Népesedés és népességpolitika (Population Change and Population Policy)*.
- Kapitány, B. (ed.) (2003). *Módszertan és dokumentáció. Az adatfelvétel ismertetése (Methodology and Documentation. Survey Description)*. NKI Műhelytanulmányok 2. Budapest, KSH NKI.
- Kiss, J. and Boncz, I. (2003). A rokkantság mint az egészségi állapot indikátora (Disability as a Health Indicator) In: Daróczi, E. (ed.): *Kettős szorításban (Double Constrain)*. NKI Kutatási Jelentések 74. Budapest, KSH NKI: 33–42.
- Klinger, A. (2001). Halandósági különbségek Magyarországon (Mortality differentials in Hungary). *Demográfia* 3–4: 227–258. [www.demografia.hu](http://www.demografia.hu)
- Kovács, K. (2003). Társadalmi rétegződés és mortalitás (Social stratification and mortality). In: Daróczi, E. (ed.): *Kettős szorításban (Double Constraint)*. NKI Kutatási Jelentések 74. Budapest, KSH NKI: 125–142.
- Kovács, K. (2004). Társadalmi rétegződés, társadalmi folyamatok és a halálozások ok szerinti elemzése (Social stratification, societal processes and cause-specific mortality). In: Daróczi, E. and Kovács, K.: *Halálozási viszonyok az ezredfordulón: társadalmi és földrajzi választóvonalak (Mortality at the Millennium: Social and Regional Divides)*. NKI Kutatási Jelentések 77. Budapest, KSH, NKI: 177–204.
- Marmot, M. and M. Bobak (2000). "International comparators and poverty and health in Europe", *British Medical Journal* 321: 1124–1128.
- McKee, M. and V. Shkolnikov (2001). "Understanding the toll of premature death among men in Eastern Europe", *British Medical Journal*, 323: 1051–1055. <http://www.bmj.com>.
- Mertens, W. (1994). Health and Mortality Trends among Elderly Population: Determinants and Implications. *Policy and Research Paper No 3*. [www.iussp.org/Publications\\_on\\_site/PRP/prp3.htm](http://www.iussp.org/Publications_on_site/PRP/prp3.htm).
- Meslé, F. (2002). *Mortality in Eastern Europe and the former Soviet Union: long-term trends and recent upturns*. Manuscript. Paper presented at IUSSP/MPIDR Workshop "Determinants of Diverging Trends in Mortality". Rostock, June 19–21 2002.
- Nolte, E., M. McKee and A. Gilmore. (2004). Morbidity and mortality in the transition countries of Europe. Chapter 9. In: *European Population Forum 2004*, 12–14 January 2004, Geneva, Switzerland "Population Challenges and Policy Responses". [www.unecce.org/ead/pau/epf](http://www.unecce.org/ead/pau/epf).
- Országos Lakossági Egészségfelmérés (2003). *National Health Interview Survey 2003*. [www.oek.hu](http://www.oek.hu).
- Spéder, Zs. (ed.) (2002). *Demográfiai folyamatok és társadalmi környezet (Demographic Processes and Societal Environment)*. NKI Műhelytanulmányok 1., Budapest, KSH NKI.
- Széles, Gy. (2002). Betegségek (Diseases) In: Boros, J., Németh, R. and Vitrai, J. (eds.): Országos Lakossági Egészségfelmérés. *OLEF2000. Kutatási jelentés (National Health Interview Survey. NHIS 2000. Research Report)*. Budapest, National Centre for Epidemiology. [www.oek.hu](http://www.oek.hu): 2-58–2-81.

- Széles, Gy. et al. (2003). „Establishment and preliminary evaluation of the General Practitioners' Morbidity Sentinel Stations Program in Hungary. Prevalence of hypertension, diabetes mellitus and liver cirrhosis” (in Hungarian). *Orvosi Hetilap* Aug 3, 144 (31): 1521–9.
- Széles, Gy. et al. (2005). „A preliminary evaluation of a health monitoring programme in Hungary”. *European Journal of Public Health* Feb; 15 (1): 22–32.
- Szende, Á. (2002). Életminőség (Quality of life) In: Boros, J., Németh, R. and Vitrai, J. (eds.): Országos Lakossági Egészségfelmérés. *OLEF2000. Kutatási jelentés (National Health Interview Survey. NHIS 2000. Research Report)*. Budapest, National Centre for Epidemiology. [www.oek.hu](http://www.oek.hu): 2-44–2-43.
- Tekse, K. (2005) (reprint). A termékenység néhány jellemzője Közép- és Dél-Európában az első világháború előtt (Selected features of fertility in Central and Southern Europe prior to the First World War). In: Faragó, T. (ed.): *Bölcsőtől a koporsóig (From cradle to grave)*. Budapest: Új Mandátum.
- Velkova, A., J.H. Wollesswinkel-van den Bosch and J.P. Mackenbach. (1997). “The East–West Life Expectancy Gap: Differences in Mortality from Conditions Amenable to Medical Interventions”, *International Journal of Epidemiology* 26, 1: 75–84.
- Vokó, Z. (2002a). Funkcionalitás (Functionalities) In: Boros, J., Németh, R. and Vitrai, J. (eds.): Országos Lakossági Egészségfelmérés. *OLEF2000. Kutatási jelentés (National Health Interview Survey. NHIS 2000. Research Report)*. Budapest, National Centre for Epidemiology. [www.oek.hu](http://www.oek.hu): 2-3–2-18.
- Vokó, Z. (2002b). Vélt egészség (Perceived health) In: Boros, J., Németh, R. and Vitrai, J. (eds.): Országos Lakossági Egészségfelmérés. *OLEF2000. Kutatási jelentés (National Health Interview Survey. NHIS 2000. Research Report)*. Budapest, National Centre for Epidemiology. [www.oek.hu](http://www.oek.hu): 2-35–2-37.
- Vokó, Z. (2002c). Várható egészség (Expected health) In: Boros, J., Németh, R. and Vitrai, J. (eds.): Országos Lakossági Egészségfelmérés. *OLEF2000. Kutatási jelentés (National Health Interview Survey. NHIS 2000. Research Report)*. Budapest, National Centre for Epidemiology. [www.oek.hu](http://www.oek.hu): 2-38–2-43.
- Watson, P. (1995). “Explaining rising mortality among men in Eastern Europe”, *Social Science & Medicine* 41: 923–934.

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