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*Excess male mortality at the productive age in Poland
at the end of the 20th century*

The development of civilisation has brought many positive acquisitions such as elongation of life period, effective treatment of many diseases, and improvement of conditions of living as well as significant decrease in mortality of infants. However, it has also caused many negative phenomena. One of them is the excessive mortality of men in middle age that is the productive age, the time of life devoted to acquisition of professional abilities, work, founding a family and raising children (6). The deaths of men at this age are a colossal economic and social loss (4). Determination of risks being a reason of this increased mortality is helpful in prophylaxis of specific diseases responsible for deaths and in promotion of health. Thus the aim of the paper is the analysis of the causes of excessive death rates in men at productive age in Poland.

MATERIAL AND METHODS

There were gathered demographic data collected by the Main Statistical Office (GUS) concerning Polish society as well as available in the literature (2) epidemiological data related to the state of health of the population of men in Poland. The mortality rates concerning Polish males were analysed in several age groups. The gathered data are presented in Table 1.

Table 1. Male mortality rates (for 1,000 persons in the same age and sex groups)

Year	Total	Age groups					
		20 - 24	25 - 34	35 - 44	45 - 54	55 - 59	60 - 64
1960	8.2	1.8	2.2	3.4	7.8	15.8	25.5
1970	8.8	1.6	2.0	3.7	7.6	15.6	25.5
1975	9.5	1.7	2.1	4.0	8.9	15.5	25.0
1980	10.9	1.8	2.4	5.0	10.9	18.7	26.6
1985	11.1	1.5	2.1	4.4	11.2	19.9	29.1
1990	11.3	1.7	2.3	4.7	11.7	20.8	30.2
1992	11.3	1.6	2.2	5.0	11.7	21.0	30.1
1994	10.9	1.4	2.0	4.6	10.4	19.4	28.4
1996	10.8	1.3	1.8	4.3	9.9	19.1	27.9

RESULTS

As far as the age groups are concerned, the mortality rates in the group of men from 20 to 24 years of age and in the group from 25 to 34 years are stable in the studied period. It is logical, as it is known that civilisation diseases manifest themselves in the older age groups and their frequency increases with age. The beginnings of this increase in mortality of men can be observed in the age group ranging from 35 to 44 years (Fig. 1).

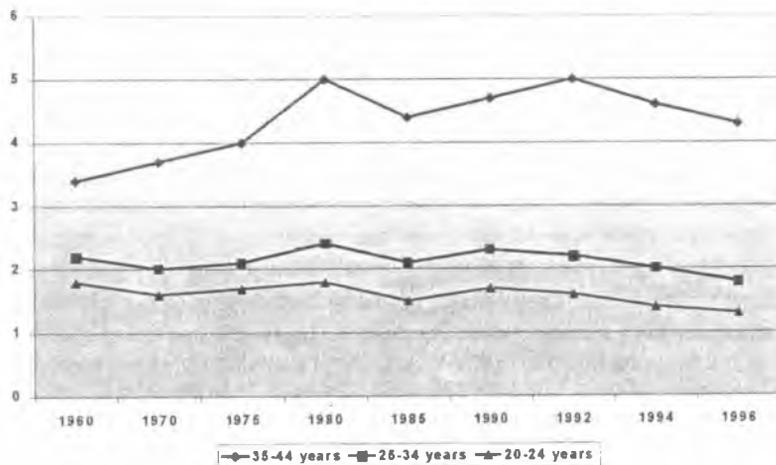


Fig. 1. Mortality rates in males, acc. to age, for 1,000 people of the same sex at the age from 20 to 44 years

In the second period of the productive age that is from 45 years to the end of the period – 65 years, there is observed a constant increase in mortality rates (Fig. 2). That is the period of the most creative work and at the same time the time when the negative effects of unhealthy lifestyle are revealed.

A growing trend in mortality of men in all age groups is evident. This tendency begins in the late 1970s and continues increasing to the beginning of the 1990s, when the highest values are observed. After the year 1992, which is an apogee, there are found signs of stabilization of the trend and the commencement of a positive (that is a decreasing) trend in male mortality. The preservation of the decrease in excessive mortality will be very profitable for the Polish population.

Mainly cardiovascular diseases, neoplasms, trauma and accidents, caused the increase in death rates in men in productive age in Poland. In the whole Polish population the cardiovascular diseases are responsible for 52% of deaths, neoplasms for about 22%, trauma and accidents comprise about 10% while all other reasons – around 16%. The main causes of male mortality are gathered in Table 2.

In the group of men between 45 and 64 years of age it is also the cardiovascular diseases that are the main reason of deaths. High increase in mortality from heart diseases is noted. It is caused for the most part by the ischaemic heart disease. The death rates in such cases have almost doubled in the last 20 years, so this phenomenon can be described as a veritable epidemic. Also the number of deaths

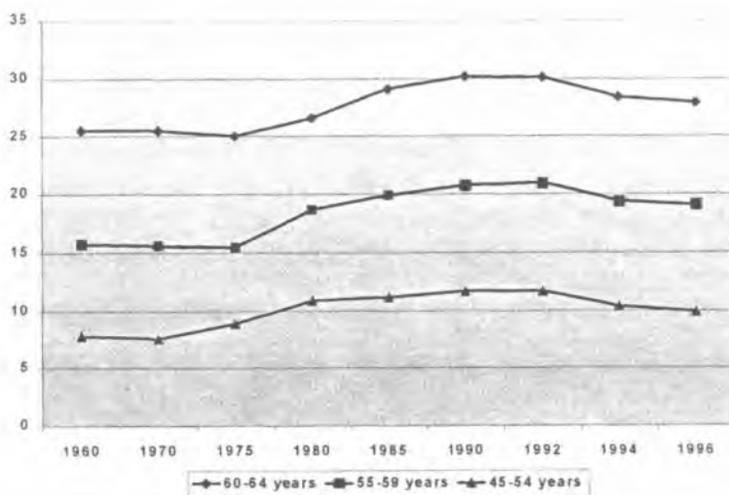


Fig. 2. Mortality rates in males, acc. to age, for 1,000 people of the same sex at the age from 45 to 64 years

Table 2. The causes of mortality in men in the age group 45 – 64 in Poland (for 100,000 persons in the same age and sex groups)

Causes	Year						
	1970	1975	1980	1985	1990	1992	1994
Heart diseases	327	368	454	478	501	498	438
a) ischaemic heart disease	172	223	277	311	340	335	282
b) hypertensive disease	29	27	29	38	33	36	32
Atherosclerosis and arterial diseases	83	82	97	113	126	122	102
Stroke	51	65	85	87	94	100	94
Pulmonary neoplasms	92	115	147	184	196	187	190
Other neoplasms	238	242	255	277	287	287	284
Trauma and accidents	128	146	169	162	183	189	177
Total	1326	1364	1580	1670	1735	1748	1618

from atherosclerosis and arterial diseases has risen considerably. The indices in case of stroke have increased by 100%. The second significant group of causes of high mortality are the neoplastic diseases. In this class it is the mortality from lung cancer that has doubled. There are no signs of decrease in death rates in the group of cancer patients and only indications of stabilization of the trend can be found. The number of fatal trauma and accidents has increased due to the intense traffic on Polish roads. The above-mentioned trends in middle-aged men mortality are presented in Figure 3.

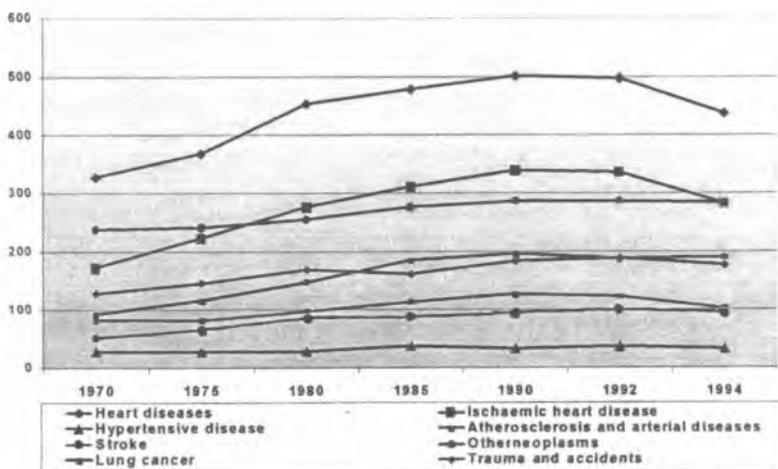


Fig. 3. Trends in cause-specific male mortality at the age from 45 to 64 years per 100,000 persons of the same sex and age in Poland

DISCUSSION

As the development of civilisation reached the current high level, it brought achievements that the former generations could only dream about. During the last 30 years most industrial countries have experienced a considerable improvement in life expectancy (1, 7). This increase in life expectancy was affected principally by an improvement in the conditions of living, decrease in infant mortality, the possibility of treatment of numerous diseases, which for centuries have been considered incurable – all triggered a rapid rise in the number of the world population (5). That in turn caused the development of big cities, overcrowded with their inhabitants as well as haste in everyday life, stress connected with work, expansion of unhealthy food, condiments and addictions (3). All this made the so-called civilization diseases appear, which affected particularly the populations in the highly developed countries in the middle of the 20th century (8).

In Poland this phenomenon became visible in the last decades of the 20th century. It concerns mainly men who proved to be susceptible to addictions to condiments, vulnerable to stress connected with work, unhealthy lifestyles and bad alimentary habits (9).

Male mortality has increased not only in the senile, but in the middle age (that is the age of the ability to work) as well. In most of the countries, including Poland, the period between 18 and 65 years of age, is considered to be the so-called productive age. Simultaneously it is the period of founding families, raising children and giving them a better start in life. On the other hand, a great job specialization forces a longer phase of learning, studying and professional training, causing shortening of the period of work of a qualified worker. So the first part of the productive age is dedicated to gaining professional experience and practice, training at work on a given position. It is particularly true in the case of highly educated workers as they keep learning and studying intensely in this period. The other part of the productive age, the years from 45 to 65, is the time of effective work, sharing gathered experience, managing teams and reaching the highest levels in the professional career. It is also the stage in life when a worker pays the highest taxes, supports his family, makes savings and

finances education of the offspring. The deaths of men at this age are an enormous loss not only to their families, but to state economy as well, as the state loses highly qualified workers and has to support the bereaved families with pensions (6).

In Poland the principal causes of excess male mortality in the productive age are cardiovascular diseases, which is consistent with the trends in the whole Polish population. However, enormous, almost double, rise in the number of deaths caused by ischaemic heart disease and pulmonary cancer is noticeable and devastating (10). It is alarming that no signs of decrease in mortality rates from neoplasms are observed, only some symptoms of stabilization of the trends (2). The number of fatal accidents and trauma has increased dramatically in the past years. It is believed that such an increase is caused by intense traffic as well as excessive speed on the motorways that are not properly constructed and maintained (6).

However, in the last years of the 20th century there is perceived a decreasing trend in mortality of men at the productive age. The maintenance of this trend will be very profitable for the Polish society in the new millennium.

CONCLUSIONS

1. The main causes of excess male mortality in Poland are cardiovascular diseases, neoplasms as well as trauma and accidents, which is consistent with the trends in whole population.

2. The mortality rates from ischaemic heart disease and pulmonary cancer have doubled in the years 1970-1990.

3. The maintenance of a decreasing trend in male mortality at the productive age, which is perceived at the end of 20th century, will be very profitable for the Polish society in the new millennium.

REFERENCES

1. Bobak M., Marmot M.: East-West mortality divide and its potential explanations: proposed research agenda. *B. M. J.*, 312, 421, 1996.
2. Główny Urząd Statystyczny. *Statistical Yearbook*. Warszawa, 1960-1996.
3. Leinsalu M.: Time trends in cause-specific mortality in Estonia from 1965 to 1989. *Int. J. Epidemiol.*, 24, 106, 1995.
4. Murray C. et al. : Adult mortality : Levels, patterns and causes. In: *World Development Report (W.D.R.) Investing in Health, World Development Indicators*. A World Bank. Oxford University Press, 23, 111, 1993.
5. Rogers R.G., Hackenberg R.: Extending Epidemiologic Transition Theory: New Stage. *Soc. Biol.*, 34, 234, 1987.
6. Szadkowska - Stańczyk I.: Nadumieralność mężczyzn w wieku produkcyjnym. Wykłady demografii. Materiały Szkoły Zdrowia Publicznego w Łodzi, Łódź 1993.
7. Valkonen T.: Assumptions about mortality trends in industrial countries: A survey. In: *Future Demographic Trends in Europe and North America: What Can We Assume Today?* London, Academic Press, 1991.
8. World Health Organisation. *World Health Statistics Annual*. WHO, Geneva 1960-1994.

9. Z a t o ń s k i W.A., J h a P.: The Health Transformation in Eastern Europe After 1990: A Second Look. Proceedings of the Conference "Health Status of Central and Eastern European Populations After Transition", Warszawa 2000.
10. Z a t o ń s k i W. A. et al.: Ecological study of reasons for sharp decline in mortality from ischaemic heart disease in Poland since 1991. B. M. J., 316, 1047, 1998.

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SUMMARY

In the last decades of the 20th century there was observed a continuous increase in mortality rates of men at the productive age, which still causes enormous economic and social problems. Thus the aim of the paper is the analysis of the causes of excess death rates in men at the productive age in Poland. There were gathered demographic data collected by the Main Statistical Office (GUS) concerning Polish society as well as available epidemiological data related to the state of health of male population in Poland. The mortality rates referring to Polish males were analysed in several age groups. It was observed that the main causes of excess male mortality in Poland were cardiovascular diseases, neoplasms as well as trauma and accidents, which is consistent with the trends in the whole population. The mortality rates from ischaemic heart disease and pulmonary cancer have doubled in the years 1970-1990. However, in the last years of the 20th century there is perceived a decreasing trend in mortality of men at the productive age. The maintenance of this trend will be very profitable for the Polish society in the new millennium.

Nadumieralność mężczyzn w wieku produkcyjnym w Polsce u schyłku XX wieku

W ostatnich dekadach XX wieku obserwuje się w Polsce stały wzrost umieralności mężczyzn w wieku produkcyjnym. Przynosi to ogromne straty gospodarce narodowej i powoduje trudne do oszacowania straty społeczne. Celem pracy jest analiza przyczyn nadumieralności Polaków. Przeanalizowano dane demograficzne zbierane przez Główny Urząd Statystyczny i dane epidemiologiczne stanu zdrowia społeczeństwa polskiego dostępne w piśmiennictwie. Zaobserwowano, że największy przyrost zgonów widoczny jest w przedziale wiekowym 60-64 lat życia. Jeśli chodzi o główne przyczyny tych zgonów, to pierwszoplanową rolę odgrywają tu choroby układu krążenia – wzrost od 486 zgonów mężczyzn w wieku 45-64 lat na 100 tys. mieszkańców w roku 1970 do 742 zgonów w 1990 roku. Następną przyczyną są nowotwory, podwoiła się liczba zgonów głównie z powodu raka płuc. Zgony z powodu urazów i wypadków wzrosły ze 128 na 100 tys. w roku 1970 do 183 na 100 tys. w roku 1990. Sytuacja ta ulega poprawie, w ostatniej dekadzie XX wieku obserwuje się zahamowanie liczby zgonów i oznaki stabilizacji, a nawet spadku tej liczby.