

Секция «Современные социальные трансформации: факторы, условия, результаты»

Mortality trends by cause of death in Israel since 1979

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Life expectancy in Israel like in other developed countries experienced a significant increase in the second half of the XXth century and at the beginning of the XXIst century. Thus, life expectancy both in males and females increased by 7.7 years in the 1983-2016 period. The analysis of mortality trends by cause of death is a good tool to understand the changes in disease occurrence or treatment. However, these changes can also be attributed to the changes in the codification of causes of death due to the periodic changes in the classification [1]. The epidemiologic transition theory as proposed by A. Omran [2] and revised by other researchers [3] suggests that the life expectancy growth is associated with considerable changes in cause-of-death mortality patterns.

Our research goal was to analyze the long-term trends in mortality by major causes of death in Israel in the light of the epidemiologic transition as proposed by A. Omran. Standardized death rates (WHO population was used as the standard) were computed for seven main groups of causes of death by sex for the period 1979-2015. To reduce the impact of the periodic changes in classifications of causes of death, we restricted our analysis to the following seven groups of causes: cardiovascular diseases, neoplasms, respiratory diseases, digestive diseases, deaths from injury and poisoning, infectious diseases and the residual group. Data were retrieved from the World Health Organization mortality database. The 9th revision of the International Classification of Diseases and Causes of Death (ICD) was used in Israel in 1979-1997, while since 1998 the 10th revision has been in use.

The overall mortality decreased by 2.2 times in females and 1.9 times in males in the 1979-2015 period. In 2015, neoplasms and the residual group of causes of death shared the first place in the overall mortality (29% and 28%, respectively). Diseases of the circulatory system occupied the third group with a share of 22% in the total mortality. Diseases of the respiratory system accounted for 8%, while infections and external causes 5%. Finally, digestive diseases occupied the last position (3%) in the present cause-of-death mortality present.

The main components of neoplasms mortality in males are cancer of the digestive, respiratory systems and prostate cancer. In females, the leading causes are neoplasms of the digestive system followed by breast neoplasms, neoplasms of the respiratory system, uterus cancer. The residual group of causes of death is presented by endocrine diseases (mostly by diabetes mellitus) as well as by symptoms, signs and abnormal findings and genitourinary diseases. The main components of circulatory diseases include ischemic heart diseases, residual group of circulatory diseases and cerebrovascular diseases. Mortality trends which were observed among the overall Israeli population have the following characteristics: 1. neoplasms show relatively steady mortality levels during in the 1980s and the 1990s; although, a decrease occurred during the early 2000s onwards; 2. since 2005 neoplasm mortality has exceeded circulatory mortality and became the leading cause of deaths; 3. circulatory mortality rates showed a significant decline over time (76.7 in 2015 as compared to 346 in 1979); 4. the residual group of causes of death manifested a sharp increase in 1998-1999 which is very likely to be attributable to the transition from ICD-9 to ICD-10; 5. infectious diseases registered a sudden mortality increase in 1999-2000

and in 2010-2011, which can be explained by the outbreak of West Nile Fever and that of Mumps, respectively; 6. during the mid-1990s, the standardized mortality rates from diseases of the respiratory system reduced a great deal, which can be explained by the changes of Israel vaccination national program and the introduction of Haemophilus influenza vaccine.

The obtained results demonstrated the improving trends throughout the whole of the period under study, which is an expression of the multidimensional public health efforts invested in population health. The changes in cause-of-death mortality patterns suggest that Israel is situated at the advanced stages of the epidemiologic transitions with an increasing burden of neoplasms and certain chronic conditions.

References

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- 2) Omran A.R. The Epidemiologic Transition: A Theory of the Epidemiology of Population Change // The Milbank Quarterly. 1971. № 4 (49). С. 509–538.
- 3) Vallin J., Meslé F. Convergences and divergences in mortality: A new approach of health transition // Demographic Research. 2004. (S2). С. 11–44.
- 4) World Health Organization mortality database (https://www.who.int/healthinfo/mortality_data/en/)

Illustrations

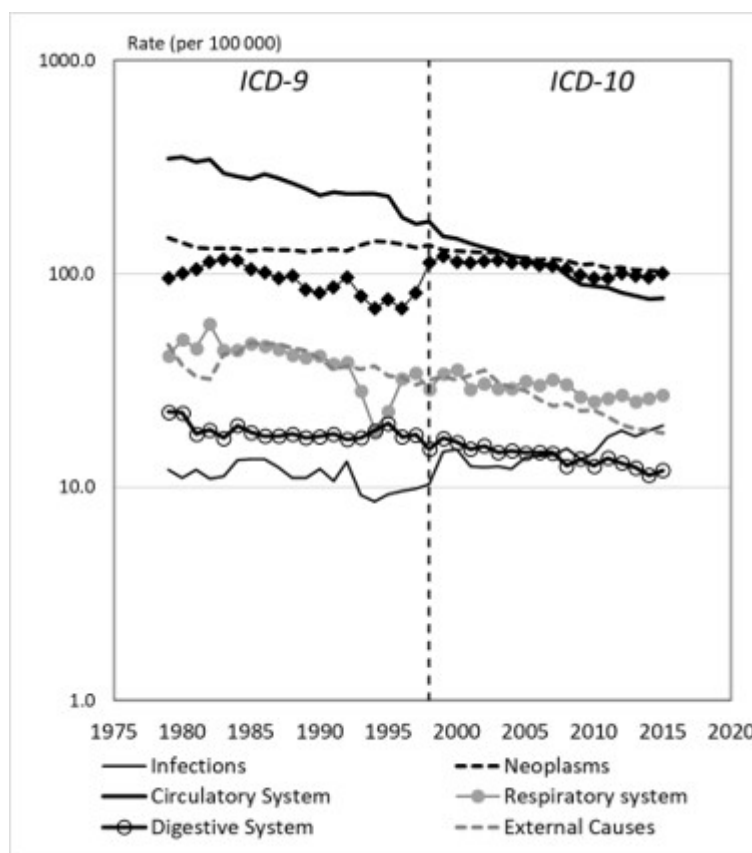


Рис. 1. Figure 1. Trends in standardized death rates by seven major causes of death in Israel, both sexes, 1979-2015