Olena Visotska, Doctor of Technical Sciences, Professor,

National Aerospace University «Kharkiv Aviation Institute», Kharkiv

ORCID: 0000-0003-3723-9771

Andrii Porvan, PhD, Associate professor,

National Aerospace University «Kharkiv Aviation Institute», Kharkiv

ORCID: 0000-0001-9727-0995

Oleksii Kovtun, master's student,

National Aerospace University «Kharkiv Aviation Institute», Kharkiv

**DETERMINATION OF PUBLIC HEALTH STATUS OF THE POPULATION**

Public health, like the health of every citizen, is a strategic goal of the state, a condition of its national security. The development of public health monitoring is a mandatory element of state regulation in the sphere of improving the quality of life of citizens. The concept of «public health» is conditionally statistical, due to the complex impact of social, biological factors of the environment [1].

There is no single method for assessing both public and individual health, but there are many attempts to create an integral indicator of health assessment [2]. At present, various methods, criteria, coefficients, and indices are used to assess public health. The use of individual indicators makes it possible to assess some aspects of public health, but does not allow for its comprehensive analysis [3-5]. Well-known complex indicators, such as the «DALY» method, the human development index, the coefficient of vitality, etc., despite their integral nature, take into account only the biological determinant of the decline in public health, and not the characteristic itself. Therefore, the goal of the work was to develop a method for determining the state of public health of the population, which will allow assessing the state of public health, taking into account all significant components of public health, which will contribute to a more qualitative solution to problems in this area.

The study of the state of public health of the population was carried out in the section of district centers of 20 regions of Ukraine. Statistical data and average annual indicators for 5 years calculated on their basis are used. Among the indicators of public health assessment (*L*) of the population, classical public health indicators are used: *x*1 – average age of the territory's population; *x*2 – primary morbidity indicator; *x*3 – an indicator of total morbidity; *x*4 – disability index; *x*5 – mortality rate, *x*6 –demographic index, *x*7 –indicator of physical development of the population. The calculations used average indicators (*Lavg*), as well as maximum (*Lmax*) and minimum (*Lmin*), which are necessary for calculating private territorial coefficients (*K1*, *K2*, *K3*, *K4*, *K5*, *K6*, *K7*). The calculation was carried out according to the formula:

*,*

where – the actual value of the *i*-*th* indicator occurring in the study area;

*LMe* – the median value of a particular indicator, which corresponds to the median of the ranking variation series.

The assessment of public health of the population of the studied population can be carried out using the integral indicator of health status assessment:

where *Ki* – ranking place for each *xi* health component over 5 years (annual average).

In case of improvement or deterioration of a health indicator, the partial coefficient will increase or decrease depending on the significance of the average statistical indicator.

A territory where all private indicators exceed the average estimated values and tend to 1 is considered favorable in terms of population health.

A territory where individual indicators are declining and the dynamics of the overall process is negative should be considered limitedly favorable.

Territories where *L* is correspondingly less than the average criterion should be considered unfavorable and especially unfavorable when the value of the indicator approaches or is equal to the maximum numerical unit.

The use of the proposed public health assessment method will allow management decisions to be made in the field of public health care, which will contribute to improving the level and quality of life.

**REFERENCES**

1. Woolf S.H., Aron L. U.S. Health in International Perspective: Shorter Lives, Poorer Health. Washington (DC): National Academies Press (US); 2013. 4, Public Health and Medical Care Systems. <https://www.ncbi.nlm.nih.gov/books/NBK154484/>
2. Sokoya T., Zhou Y., Diaz S., et al. Health Indicators as Measures of Individual Health Status and Their Public Perspectives: Cross-sectional Survey Study. J Med Internet Res. 2022; 24(6): e38099. <https://doi.org/10.2196/38099>
3. Chen H, Hailey D, Wang N, Yu P. A review of data quality assessment methods for public health information systems. Int J Environ Res Public Health. 2014; 11(5): 5170-5207. <https://doi.org/10.3390/ijerph110505170>
4. Elizabeth McGill, Vanessa Er, Tarra Penney, Matt Egan, Martin White, Petra Meier, Margaret Whitehead, Karen Lock, Rachel Anderson de Cuevas, Richard Smith, Natalie Savona, Harry Rutter, Dalya Marks, Frank de Vocht, Steven Cummins, Jennie Popay, Mark Petticrew. Evaluation of public health interventions from a complex systems perspective: A research methods review, Social Science & Medicine. 2021. Vol. 272. 113697. <https://doi.org/10.1016/j.socscimed.2021.113697>.
5. Pradana, A. R., Purnami, C. T., & Mawarni, A. Literature Review: Data Quality Assessment Methods of Electronic Tuberculosis Recording and Reporting. International Journal of Health, Education & Social (IJHES). 2020. 3(7), 1-15. <https://doi.org/10.1234/ijhes.v3i7.97>