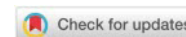


A STUDY OF DIABETES MORTALITY AS A PROPORTION OF TOTAL MORTALITY IN EUROPEAN UNION MEMBER STATES

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Abstract: One of the most common chronic diseases in the WHO European Region is diabetes. Europe has the highest burden of type 1 diabetes in the world. Analysts estimate that by 2045, 1 in 10 people living in the region will have diabetes.

The aim of this study is to examine diabetes mortality as a proportion of total mortality in the member states of the European Union, as well as in Norway and Iceland.

Methodology: For processing and analysis of the information received, we used the following methods: Documentary method – source of information are the Health Profiles for 2023 of the 27 Member States of the European Union and Norway and Iceland from the Organization for Economic Co-operation and Development; Method of system analysis; Comparative-analytical method; Mathematical and statistical method; Graphical analysis – to illustrate the results obtained.

Results: From the study it is clear that the relative share of deaths from diabetes is the highest - 8.2% in Croatia, followed by Cyprus - 6.8% and Malta - 5.8%, and the lowest in Slovakia – 1.1% and with 1.2% are in Belgium, Bulgaria and Finland. The EU average is 2.6%.

Discussion: In 2019, deaths in the European region caused by diabetes were approximately 186,000. The number of deaths due to diabetes is increasing and is expected to double from 2005 to 2030. Despite these alarming figures, approximately 1 in 3 people living with diabetes remain undiagnosed, and approximately half of those diagnosed do not meet their treatment goals.

Conclusion: Diabetes is a worldwide disease. An unfavorable trend is that diabetes continues to spread and worsen the quality of life of more and more people. And currently there is no cure for this disease, but medicine is constantly developing and researching new, more effective methods of treatment.

Recommendations: Effective management of diabetes requires not only medication, but also psychological support and individual care for each patient. By feeling the sympathy of society, people with diabetes could more easily take control of their health and life.

Keywords: diabetes, mortality, proportion, quality of life, EU countries

Field: 3) Medical sciences and Health

1. INTRODUCTION

Diabetes is one of the leading causes of death and disability worldwide, affecting people regardless of their place of residence, age, and gender. (Borisova et al., 2024: 135). The International Diabetes Federation reports that in 2021, there were 537 million people with diabetes worldwide, representing 10.5% of the total population. This number is expected to grow to 643 million by 2030 and 783 million by 2045. (Borisova et al., 2024: 135).

Early mortality from diabetes has increased by 5% since 2000, while premature mortality from other major non-communicable diseases has decreased. More people are living with diabetes, and more people with diabetes are dying prematurely than they would have if they had access to high-quality and equitable care and treatment. (<https://www.who.int/initiatives/the-who-global-diabetes-compact/the-global-diabetes-compact-forum>)

Diabetes is one of the most common chronic diseases in the WHO European region. Europe has the highest burden of type 1 diabetes in the world. Analysts predict that by 2045, 1 in every 10 people in the region will develop diabetes. (<https://www.who.int/europe/news-room/events/item/2024/11/14/default-calendar/world-diabetes-day-2024--a-holistic-approach-empowers-people-on-their-diabetes-journey>; https://www.who.int/europe/health-topics/diabetes#tab=tab_2)

Various epidemiological studies highlight that the increasing prevalence of diabetes is due to unfavorable lifestyle changes, such as the development of overweight and obesity, chronic stress, decreased physical activity, unbalanced and poor nutrition, and an aging population combined with genetic factors, which is particularly characteristic of EU member states. (Popova, 2015: 118)

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Table 1. Leading causes of death worldwide

Cause	2019	2020
Ischemic heart disease	8,880,000	
Stroke	6,190,000	
COPD	3,220,000	
Infection of the lower respiratory tract	2,590,000	
Neonatal conditions	1,960,000	
COVID 19		1,800,000
Cancer of the trachea, bronchi, lung	1,760,000	
Alzheimer's disease and other dementias	1,590,000	
Diabetes mellitus	1,490,000	
Diarrheal diseases	1,450,000	

Sources: Global Health Estimates 2019 [2] and WHO Covid-19 surveillance dashboard [37]

Table 1 presents a comparison of the total number of deaths from leading causes in the Global Health Goals for 2019 with reported COVID-19 deaths in 2020, showing that diabetes ranks 9th among them.

The significance of this issue arises primarily from the profound social and health needs of people with deteriorated quality of life and increased specific health requirements. Complex psychological and socioeconomic challenges emerge, driven by the progressive prevalence of metabolic disorders—obesity and diabetes—and evidence of a strong trend toward irreversible high disability and mortality. The population in Bulgaria, as well as across the European Union, exhibits an aging demographic profile, with significant social, economic, medical, psychological, and ethical problems and consequences. (Vizeva, 2014: 5-6)

The aim of this study is to examine diabetes mortality as a share of total mortality in European Union member states, as well as in Norway and Iceland.

2. MATERIAL AND METHODS

For processing and analyzing the data, we used the following methods:

- Document analysis – the sources of information include the 2023 Health Profiles of the 27 EU member states and Norway and Iceland from the Organisation for Economic Co-operation and Development;
- Systematic analysis;
- Comparative-analytical method;
- Mathematical-statistical method;
- Graphical analysis – to illustrate the obtained results.

3. RESULTS

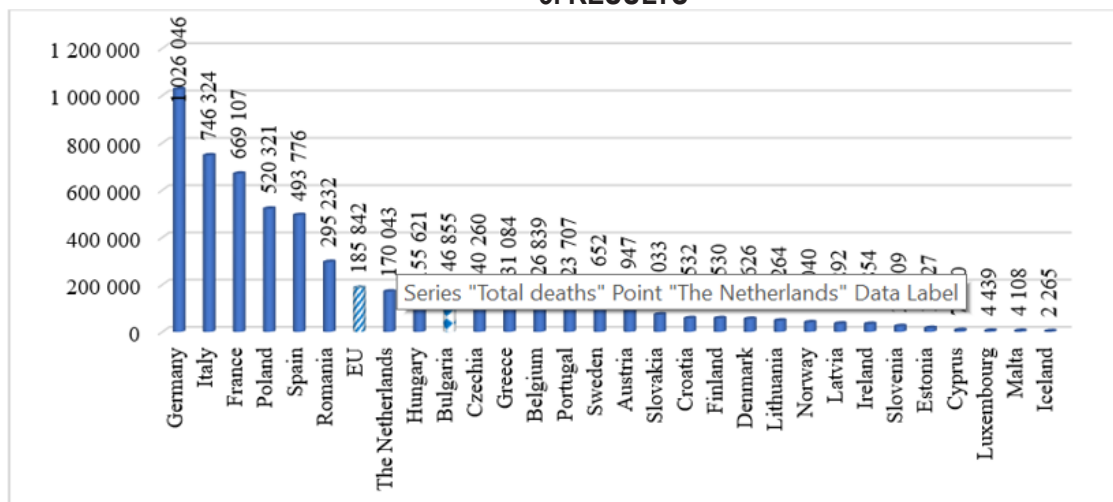


Figure 1. Total mortality in EU countries

Sources: Eurostat Database (the data refer to 2020 or 2021 for the different countries), OECD (2023)

Figure 1 presents the total mortality in EU countries for 2020 and 2021 for the different countries,

according to Eurostat data. The highest numbers are in Germany (1,026,046), followed by Italy (746,324) and France (669,107). The lowest numbers are in countries with smaller populations, namely Iceland (2,265), followed by Malta (4,108) and Luxembourg (4,439). The EU average is 185,842 deaths, with Bulgaria recording a total of 146,855.

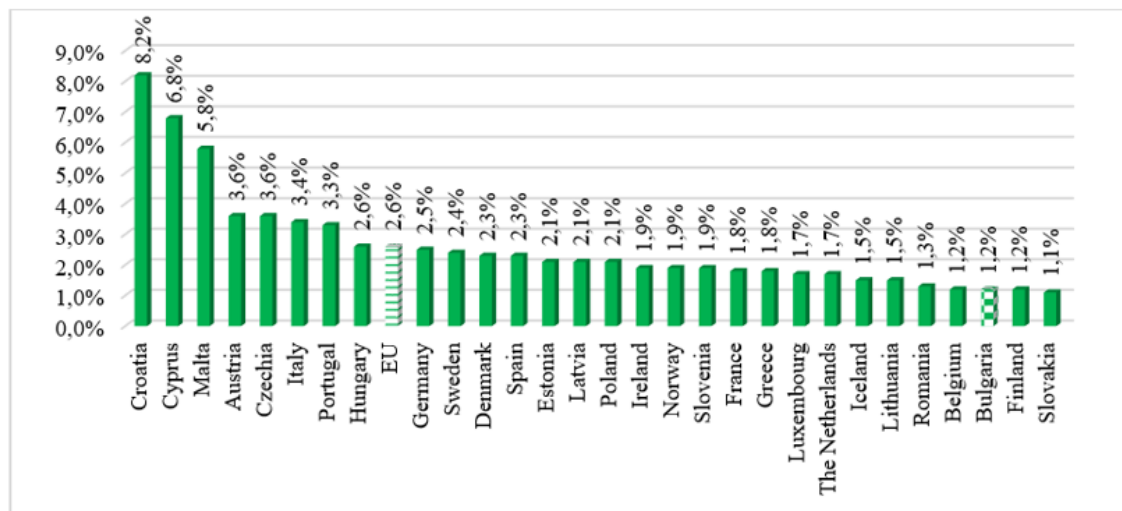


Figure 2. Diabetes-related deaths in EU countries

Sources: Eurostat Database (the data refer to 2020 or 2021 for the different countries). OECD (2023)

Figure 2 shows that in 2021, the highest relative share of diabetes-related deaths was in Croatia (8.2%), followed by Cyprus (6.8%) and Malta (5.8%), while the lowest was in Slovakia (1.1%), and Belgium, Bulgaria, and Finland each had 1.2%. The EU average is 2.6%.

In Croatia, over one in five adults (23%) is obese, significantly above the EU average (16%). (OECD, 2023: Croatia) Obesity is also a growing issue among children and adolescents, with the percentage of overweight and obese 15-year-olds increasing from 18% in 2018 to 24% in 2022, above the EU average (21%). (OECD, 2023: Croatia) (OECD, 2023: Croatia) Croatians are known for high sugar and salt intake, much higher than the EU average of 17%. Twenty-two percent of all deaths are due to risk factors related to poor nutrition.

In Cyprus, childhood obesity is a major public health concern. (OECD, 2023: Cyprus) One in seven adult Cypriots (15%) was obese in 2019, close to the EU average. However, from 2018-2020, 62% of children aged 6-9 were overweight, the highest rate in EU member states (WHO Regional Office for Europe, 2022).

Malta has the highest rate of overweight and obesity among adults and adolescents in the EU, and addressing this issue has been a key government priority over the last decade. (OECD, 2023: Malta)

4. DISCUSSION

In 2019, there were approximately 186,000 diabetes-related deaths in the European region. The number of deaths due to diabetes is increasing and is expected to double from 2005 to 2030. Despite these alarming figures, around one in three people living with diabetes remains undiagnosed, and approximately half of those diagnosed do not meet their treatment goals.

In the WHO European region, the burden of diseases associated with poor nutrition continues to grow. Unhealthy diets, overweight, and obesity contribute to a significant portion of non-communicable diseases, including cardiovascular diseases, type 2 diabetes, and certain cancers, which are the leading causes of death in the region. Numerous national studies in most countries provide data on very high consumption of saturated fats, trans fats, sugar, and salt; meanwhile, there is low consumption of vegetables, fruits, and whole grains, and an increasing number of people are obese. This risky diet not only shortens life expectancy but also negatively impacts the quality of life. (https://www.who.int/europe/health-topics/nutrition/#tab=tab_1)

5. CONCLUSIONS

Diabetes is a disease affecting the entire world. Significant national, regional, local, and individual differences in the volume and quality of medical services remain, despite proven effective interventions

for managing chronic non-communicable diseases, including metabolic disorders.

An unfavorable trend is that diabetes continues to spread and worsen the quality of life for an increasing number of people. While there is currently no cure, medical science is continuously advancing and exploring new, more effective treatment methods. (<https://www.who.int/europe/news-room/events/item/2024/11/14/default-calendar/world-diabetes-day-2024--a-holistic-approach-empowers-people-on-their-diabetes-journey>)

6. RECOMMENDATIONS

Effective diabetes management requires not only medication but also psychological support and individualized care for each patient. By feeling the empathy of society, people with diabetes can more easily take control of their health and lives.

The development of the global obesity epidemic, type 2 diabetes, and other chronic non-communicable diseases will continue unless society's efforts are directed toward proper nutritional policies, changes in the food system, and thorough education for individuals to become aware of their own healthy micro-environments, different from their current toxic and obesogenic environments. (Popova, 2015: 141)

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