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RESILIENCE OF EU HEALTHCARE SYSTEMS

The article highlights the critical role of healthcare system resilience in responding effectively to public health crises, with a particular emphasis on financing, effectiveness, and preparedness. It delves into a comparative analysis of healthcare costs and system effectiveness in several EU countries, revealing that higher expenditure doesn't always equate to greater resilience. The article also highlights the lack of investment in preventing measures, even in economically developed countries, resulting in minimal improvements in healthcare system resilience. It has been noted that there is no correlation between strict government measures during the COVID-19 pandemic and healthcare system effectiveness. The importance of synergy between government epidemic control actions and healthcare system resilience is emphasized. The key factors that influenced healthcare system resilience during the pandemic, including proactive preparedness, resource allocation, data analytics capabilities, communication, public trust, and adaptive

СТІЙКІСТЬ СИСТЕМ ОХОРОНИ ЗДОРОВ'Я ЄС

У статті підкреслюється критична роль стійкості системи охорони здоров'я в ефективно-му реагуванні на кризи громадського здоров'я, з особливим наголосом на фінансуванні, ефективності та готовності. Сконцентровано увагу на порівняльному аналізі витрат на охорону здоров'я та ефективності системи в країнах ЄС, показуючи, що більші витрати не завжди означають більшу стійкість. Наголошено на недостатності інвестування у превентивні заходи навіть у економічно розвинутих країнах, що призвело до мінімального покращення стійкості системи охорони здоров'я. Зауважено на відсутності кореляції між суворими урядовими заходами під час пандемії COVID-19 та ефективністю системи охорони здоров'я. Підкреслюється важливість синергії між урядовими діями з контролю за епідемією та стійкістю системи охорони здоров'я. У дослідженні визначено ключові фактори, які вплинули на стійкість системи охорони здоров'я під час пандемії, зокрема проактивна готовність, розподіл ресурсів, можливості аналізу даних, комунікація, громадська довіра та



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policies have been identified in the research. To enhance healthcare system resilience, it is recommended to focus on financial resilience, healthcare personnel resilience, and health infrastructure resilience. Strategies to achieve this include effective governance, flexible financing, resource availability, and adaptable service delivery. The multifaceted nature of healthcare system resilience and the need for a comprehensive approach to its provision in the conditions of emergency situations in the field of healthcare are emphasized. The authors' analysis reveals a complex interplay of factors that contribute to healthcare system resilience, which can be used by government officials as a roadmap for strengthening the healthcare systems in the context of future challenges.

Keywords: resilience, health care, European Union, shock influences, COVID-19 crisis.

адаптивна політика. Щоб підвищити стійкість системи охорони здоров'я, рекомендується зосередитися на фінансовій стійкості, стійкості медичних працівників та стійкості інфраструктури охорони здоров'я. Стратегії для досягнення цього включають ефективне управління, гнучке фінансування, доступність ресурсів і гнучке надання послуг. Підкреслено багатогранність стійкості системи охорони здоров'я та необхідність комплексного підходу до її забезпечення в умовах надзвичайних ситуацій у сфері охорони здоров'я. Аналіз, проведений авторами, розкриває складну взаємодію факторів, які сприяють стійкості системи охорони здоров'я, що може бути використано урядовцями як дорожня карта щодо зміцнення системи охорони здоров'я у контексті майбутніх викликів.

Ключові слова: стійкість, охорона здоров'я, Європейський Союз, шоківі впливи, криза COVID-19.

JEL Classification: E65, F15, I15, I131.

Introduction

The resilience of healthcare systems in EU countries is a key determinant of their economic development dynamics nowadays. The degree of resilience of healthcare systems to shock impacts is particularly critical during crises. The most recent crisis that affected the healthcare system was the COVID-19. This crisis, in particular, highlighted the differences in the resilience of healthcare systems among EU member countries, revealed shortcomings within them, and underscored the price that nations paid for these shortcomings.

The resilience of healthcare systems holds a profound significance, rooted in its paramount role of safeguarding lives and acting as the primary defense against the relentless advance of diseases and mortality. In times of pandemics, this resilience becomes the linchpin, ensuring uninterrupted access to critical medical care, thereby expediting the crucial processes of early detection, accurate diagnosis, and swift treatment of infections.

Beyond the immediate crisis management, a robust healthcare system serves as the vanguard of public health. It champions disease prevention through vaccination programs, public health campaigns, and health education initiatives. It empowers individuals to lead healthier lives, fortifying their immunity and bolstering overall well-being. In the absence of a resilient healthcare system, a nation faces not only a health crisis but also a catalyst for social unrest and profound economic losses. The ongoing COVID-19 pandemic has underscored this, with the healthcare system's role extending beyond patient care to crisis management, mitigating the far-reaching economic repercussions. Furthermore, the healthcare system emerges as a key patron of scientific research, nurturing the development of life-saving medicines and vaccines. It is an essential collaborator in the fight against current health threats while actively contributing to the prevention of future pandemics. In an equitable society, a resilient healthcare system is duty-bound to extend its care and support to the most vulnerable. This includes the elderly, children, and individuals grappling with chronic illnesses.

In a world facing global threats, healthcare systems of EU member states closely collaborate, sharing information and resources for collective security. Furthermore, a healthcare system strengthened during a crisis serves as a model for preparedness in the face of future challenges.

The healthcare system is a fundamental component of national resilience and well-being, requiring investment and attention from both the government and society. Times of crisis, such as the COVID-19 pandemic, underscore its importance, and investments in its development and strengthening should be viewed as a strategic investment in the country's future and the health of its citizens.

Healthcare systems resilience is widely researched in scientific literature. There are two main approaches to understand the concept of "resilience" as an ability and as an outcome. The first approach views resilience as the ability to resist, absorb, accommodate, adapt to, transform and recover in a timely and efficient manner (Thomas, 2020; Firsova, 2019); it is often conceptualized within the context of health emergencies and disaster risk management (*HEDRM*), resilience may also be to other social, political, economic and environmental shocks (Merette, 2022).

The second approach views resilience as an outcome is predominantly quantitative, working under the assumption that resilience can be measured and indexed, and that measuring variation in such outcomes will identify inputs that can improve the system (Biddle, 2020; Nikolaiets et al., 2023).

Describing resilience as both an outcome and an ability allows for resilient systems to be viewed with a broader scope and recognizes the additional dynamics and complexities that need to be understood and researched (Saulnier & others, 2021). The issue of sustainability in the context of the economic security of the state is considered in their study by Mazaraki and Melnyk (2022).

The issues of ensuring the healthcare systems resilience have been studied by Murphy et al. (2020) investigating the changes in financial resilience of the health care system promoting flexible financial system to hospitals to accommodate to the challenges of pandemic. Hospital resilience has been investigated by Merette et al. (2022) with a conclusion that strengthening hospital resilience requires consensus regarding its conceptualization to inform a roadmap for operationalization and evaluation and guide meaningful and effective action at facility and country level.

The aim of the research is to identify the most significant factors that determine the EU health systems resilience during COVID-19 pandemic and government policies that helped to promote it. The hypothesis of the article is that in times of crisis, state regulation of the healthcare system plays a crucial role in ensuring its resilience.

The study is divided into three parts. The measures of financial support of the healthcare system in EU countries are assessed in the first part. A comparative analysis of the degree of healthcare system's resilience in EU countries is conducted in the second. Directions for ensuring the resilience of the health care system in the EU are proposed in the final third part.

1. Financial support of the healthcare system

Financial support of the healthcare system is one of the most important factors for the resilience of the healthcare provision. Different countries have a large variety of a system support of the healthcare. It is important to investigate such an experience for the benefit of Ukrainian economy.

Health Expenditure Index is average expenditure on health per person, based on Purchasing Power Parity; includes public and private financing presented in *Table 1* (FM Global, 2023).

Table 1

Health expenditure index for EU member countries in 2020–2023

Rating	Country	2020	2021	2022	2023
		points (max. – 100 points)			
1	Germany	60.5	61.4	60.9	59.9
2	Luxembourg	59.9	60.1	60.3	58.3
3	Austria	56.7	57.1	56.9	54.5
4	Sweden	56.6	57.0	55.5	54.0
5	Denmark	56.3	56.3	55.5	54
6	Ireland	56.1	56.7	54.8	56.7
7	Netherlands	56.1	56.2	56.1	56.3
8	Belgium	54.6	54.9	54.2	50.0
9	France	50.9	50.5	50.9	48.8
10	Finland	43.4	43.2	43.0	41.6
11	Malta	38.6	38.3	41.6	39.8
12	Italy	36.0	35.9	35.6	34.1
13	Spain	35.3	35.3	35.5	34.3
14	Portugal	30.5	31.5	31.9	30.5
15	Slovenia	29.7	31.0	32.2	31.8
16	Czech Republic	28.5	29.5	30.2	32.5
17	Cyprus	25.3	26.7	27.4	27.1
18	Greece	22.9	22.9	22.9	22.3
19	Estonia	22.0	23.2	23.8	24.6
20	Lithuania	21.4	22.5	24.9	24.7
21	Slovakia	20.0	19.8	20.4	19.0
22	Hungary	19.5	19.9	19.3	20.2
23	Poland	19.4	19.1	20	18.7
24	Croatia	17.6	18.2	19.0	18.6
25	Latvia	16.6	18.0	19.3	19.5
26	Bulgaria	15.6	15.8	15.7	17.4
27	Romania	13.5	15.3	16.6	16.8

Note: low level (1–19 points), moderate level (20–44 points), medium level (45–69 points), sufficient level (70–100 points).

Source: compiled by the authors according to (FM Global, 2023).

According to the *Table 1* the countries that spend the most upon the health care of their citizens were Germany, Luxembourg, Austria, Sweden, Denmark, Ireland, Netherlands, Belgium, France, and Finland. The expenditures of these countries were at the peak of the COVID-19 crisis reaching a

medium level of expenditures, and after 2022 the level of spending on healthcare have decreased gradually. Such countries as Hungary, Poland, Croatia, Latvia, Bulgaria and Romania had a low level of health expenditures per citizen.

Each year, experts from the Numbeo service compile the Health Care Index for Country ranking. It is a comparative assessment of 94 countries worldwide based on the quality, accessibility, and cost of medical services, the equipment of hospitals, and the professional level of medical personnel. Each country is given a score from 1 to 100. The higher the final score, the better the country's healthcare system. The values of the healthcare index for EU countries are presented in *Figure 1*.

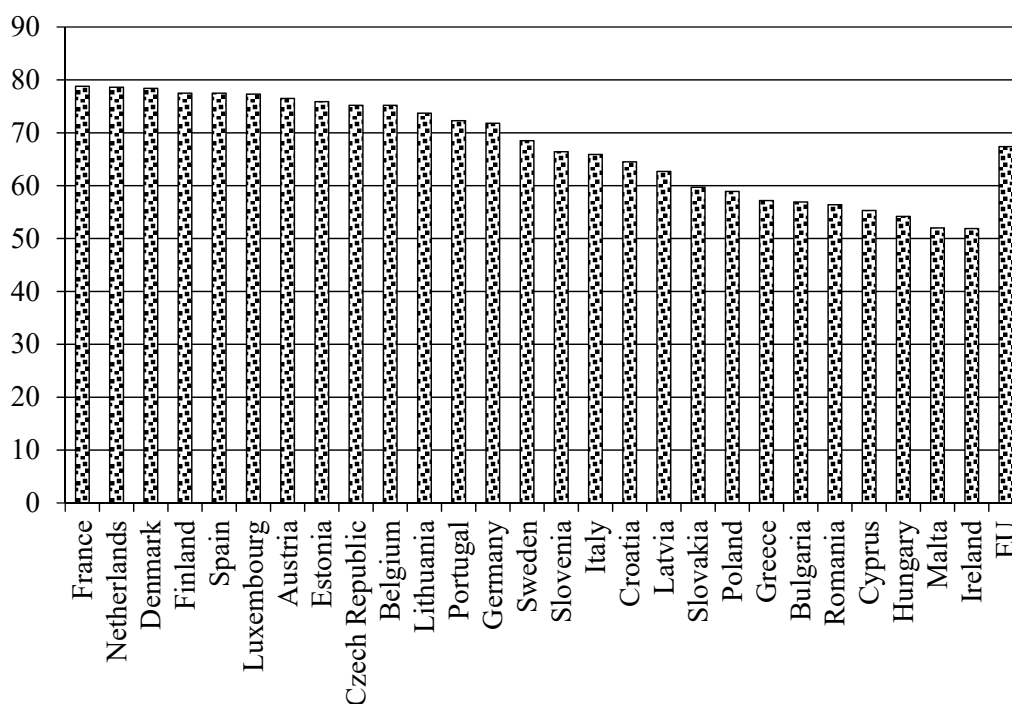


Figure 1. Health Care Index by EU Country in 2023

Note: low level (1-29 points), moderate level (30-44 points), medium level (45-69 points), sufficient level (70-100 points).

Source: compiled by the authors according to (*Health Care Index by Country*, 2023).

Overall, the healthcare systems in the EU is at the medium level. Thirteen countries are at a sufficient level of healthcare, while 14 countries are at a medium level. The top ten countries are France, the Netherlands, Denmark, Finland, Spain, Luxembourg, Austria, Estonia, Czech Republic, Belgium.

The comparison of the results of *Table 1*, that represent average expenditure on health per person and Graph 1, that assess the effectiveness of the healthcare system shows interesting results. It can be seen that some countries that spend more on the healthcare are not at the top with its effectiveness, such as Germany, Sweden and Ireland. On the contrary, there are countries that spent comparingly less on the healthcare, but have the same level of its effectiveness such as Spain, Estonia and Czech Republic. Here we have to understand that the resilient healthcare system will be with a balanced expenditures for its maintenance. So, there should be a balance

between the health expenditures, and the sustainability of the healthcare system resilience. On the contrary, according to our analysis in Germany, Sweden and Ireland expenditures on the healthcare system do not add to its resilience.

2. The degree of the healthcare system's resilience

The 2021 Global Health Security Index (GHS) measures the capacities of 195 countries to prepare for epidemics and pandemics. The GHS Index is organized by six categories aimed at assessing country capability to prevent, detect, and respond to biological threats as well as factors that can hinder or enhance that capability such as health systems, norms, and risks (Global Health Security Index, 2021). The results of the Global Health Security Index for European union member states represented in *Table 2*.

Table 2

EU member states in global health security index, 2021

Rating	Country	2021		Level
		place (195 countries)	points (100 points)	
1	Finland	3	70.9	upper middle level
2	Slovenia	6	67.8	
3	Germany	8	65.5	
4	Sweden	10	64.9	
5	Netherlands	11	64.7	
6	Denmark	12	64.4	
7	France	14	61.9	
8	Latvia	14	61.9	
9	Spain	17	60.9	
10	Bulgaria	20	59.9	lower middle level
11	Lithuania	21	59.5	
12	Belgium	22	59.3	
13	Austria	26	56.9	
14	Poland	29	55.7	
15	Estonia	30	55.5	
16	Ireland	31	55.3	
17	Portugal	33	54.7	
18	Hungary	34	54.4	
19	Slovakia	34	54.4	
20	Czech Republic	39	52.8	
21	Italy	41	51.9	
22	Greece	42	51.5	
23	Croatia	48	48.8	
24	Luxembourg	51	48.4	
25	Romania	57	45.7	
26	Cyprus	70	41.9	
27	Malta	77	40.2	

Note: low level (0–20 points), upper low level (20.1–40 points), lower middle level (40.1–60 points), upper middle level (60.1–80 points), high level (80.1–100 points).

Source: compiled by the authors according to (Global Health Security Index, 2021).

As is shown in the *Table 2* there are nine countries of EU that are at the upper middle level by Global Health Security Index such as Finland, Slovenia, Germany, Sweden, Netherlands, Denmark, France, Latvia, and Spain. The rest of the countries of the European Union, are at the lower middle level by this index. The results of the study of GHS show that many nations, even those with significant financial resources, have not allocated sufficient funds to enhance their readiness for epidemics or pandemics. The majority of countries witnessed minimal to no enhancements in maintaining a resilient, proficient, and easily accessible healthcare system for detecting and responding to outbreaks. Almost all countries have experienced an escalation in political and security risks, with the most resource-constrained nations facing the highest risks and exhibiting the most significant gaps in preparedness. Nations are persistently disregarding the preparedness requirements of vulnerable populations, amplifying the repercussions of health security crises. Moreover, the global community remains ill-equipped to avert potentially catastrophic biological events that could surpass the scale of damage caused by COVID-19 (Global health security index, 2021).

It is important to see what epidemic control measures have been taken by the governments of European union countries to prevent the spreading of the COVID-19 disease. Epidemic control measures are a combination of organizational, medical, sanitary, veterinary, engineering, administrative, and other actions carried out with the aim of preventing the spread of infectious diseases, localizing and eliminating their outbreaks, flare-ups, and epidemics.

The restrictiveness of the government measures during the epidemics is measured by the Government Stringency Index (*Table 3*). Government Stringency Index assesses the usage of such measures of the authorities to control that epidemics: school closures for quarantine; implementation of quarantine restrictions in institutions and enterprises; cancellation of mass gatherings; restrictions on public gatherings; public transport shutdown; implementation of outdoor movement restrictions; information campaigns; restrictions on domestic travel (Government Stringency Index, 2022).

Table 3

Government stringency index in EU

Rating	Country	On 01.04.20	On 01.04.21	On 01.04.22
1	Croatia	96.30	43.52	11.11
2	Cyprus	92.59	65.74	41.67
3	Slovenia	89.81	85.19	18.52
4	France	87.96	68.52	23.15
5	Romania	87.04	63.89	11.11
6	Ireland	85.19	84.26	11.11
7	Italy	85.19	79.63	53.70
8	Spain	85.19	69.44	43.98
9	Greece	84.26	87.96	61.11
10	Czech Republic	82.41	81.48	20.37
11	Portugal	82.41	80.56	17.59

End of the Table 3

Rating	Country	On 01.04.20	On 01.04.21	On 01.04.22
12	Belgium	81.48	75.93	17.59
13	Poland	81.48	75.93	14.81
14	Malta	81.48	75	52.78
15	Austria	81.48	75	40.74
16	Lithuania	81.48	66.67	17.59
17	Luxembourg	79.63	45.37	25
18	Netherlands	78.70	75	23.15
19	Estonia	77.78	61.11	32.41
20	Hungary	76.85	79.63	11.11
21	Germany	76.85	75	48.15
22	Slovakia	75	74.07	20.37
23	Denmark	72.22	64.81	11.11
24	Bulgaria	71.30	53.70	26.85
25	Finland	71.30	52.31	26.85
26	Latvia	66.67	56.48	13.89
27	Sweden	64.81	65.74	11.11

Note: if the index on a scale from 0 to 100 (100 = the strictest) is at least 60, then the country employed strict quarantine measures.

Source: Government Stringency Index, 2022.

The analysis of the data in the *Table 3* shows that the countries with the strict measures taken by the government during the COVID-19 such as Croatia, Cyprus, Slovenia, Romania, Ireland, Italy, Greece were not corresponded to the effectiveness of the healthcare system and its resilience as represented in the *Figure 1*. So, the results of the analyzes show that the country healthcare resilience is not correlated to the strictness us of the anti-epidemic measures taken during the pandemic.

There should be the *synergy between the state's epidemic control actions and the resilience of the healthcare system*. There is the critical need for a coordinated and harmonious approach to managing public health crises. Thus, we distinguish the *factors that affected healthcare system resilience* during COVID-19 pandemic in EU:

- effective preparation and response to public health emergencies, encompassing epidemics and pandemics, hinge on proactive readiness within the healthcare system. This proactive stance necessitates the presence of adequate medical supplies, a proficient healthcare workforce, and meticulously outlined protocols well in advance of any crisis. This preparedness is amplified when hospitals and government actions synchronize, ensuring the state harnesses these resources optimally in the face of emerging threats;
- the orchestration of an efficient allocation of resources becomes paramount in epidemic control. Such endeavors often call for substantial resources, spanning hospital beds, ventilators, personal protective equipment,

and robust testing capabilities. National security itself hinges on maintaining these critical resources in a state of constant readiness, poised to be deployed when crises loom on the horizon;

- in the realm of epidemic control, data-driven decision-making stands as a cornerstone. It necessitates real-time access to data encompassing the disease's spread, healthcare system capacity, and public adherence to control measures. A resilient healthcare system must boast robust data collection and analysis capabilities. With this foundation, the government can derive actionable insights from the data, facilitating the implementation of precisely targeted interventions and the allocation of resources where they are most urgently required;

- communication represents the vital bridge between healthcare authorities and the government. Clear, transparent communication is of paramount importance during crisis scenarios. The government heavily relies on accurate and timely information provided by the healthcare system regarding the disease's status, treatment options, and preventative measures. This essential data equips the government to relay crucial information to the public through diverse channels, thereby fostering compliance with control measures;

- the establishment of public trust in government actions to control epidemics is a linchpin in this intricate process. A resilient healthcare system, in tandem with coordinated government measures, plays a pivotal role in nurturing this trust. When the public perceives a harmonious and efficient collaboration between the healthcare system and government, they are more inclined to comply with guidelines and measures, a crucial facet of achieving success in epidemic control;

- looking beyond immediate crisis management, long-term planning should be viewed as an integral facet of epidemic control, situated within a broader, overarching public health strategy. The resilience of the healthcare system should be an ongoing endeavor, consistently improved and updated by incorporating valuable lessons gleaned from previous outbreaks;

- adaptive policies are indispensable, as epidemics are dynamic and ever-evolving. The government must be flexible in adjusting control measures in collaboration with the healthcare system to ensure effectiveness without undue stringency. This adaptability safeguards that control measures remain relevant and balanced, promoting their optimal impact.

In navigating the complexities of epidemic control, a synergistic relationship between the state's actions and healthcare system resilience is paramount. The critical elements include proactive preparedness, efficient resource allocation, data-driven decision-making, transparent communication, establishment of public trust, long-term planning, and adaptive policies. This comprehensive and coordinated approach ensures optimal utilization of resources, fosters public compliance, and enables effective crisis management while building a resilient healthcare system for the future.

3. Directions for ensuring the resilience of the health care system

In order to achieve a higher degree of the health care system resilience, it is necessary to support its following areas: financial resilience of hospitals, resilience of healthcare workers, resilience of health infrastructure (*Figure 2*).

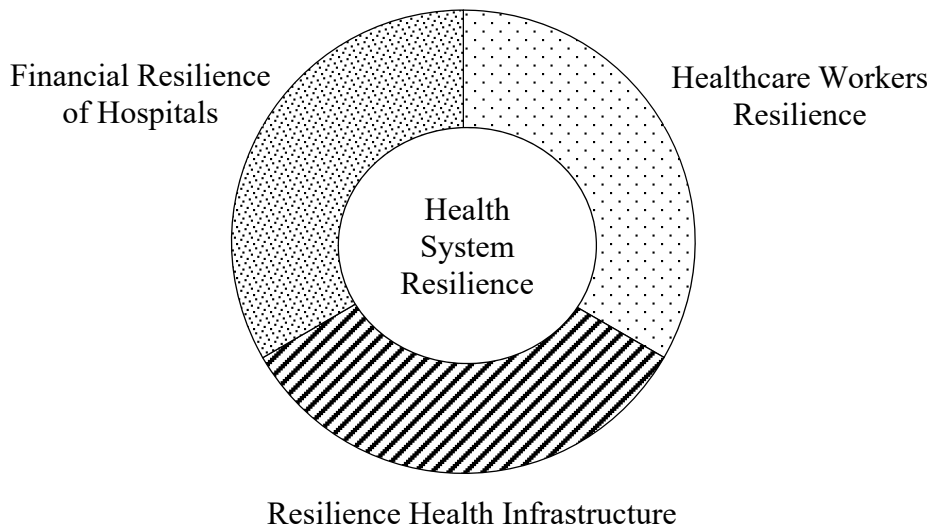


Figure 2. Directions for ensuring the resilience of the health care system in EU member states

Source: compiled by authors.

In response to the COVID-19 pandemic and to strengthen crisis preparedness in the EU the EU4Health program was created. With a budget of EUR 5.3 billion for the period 2021–2027, the EU4Health program represents unprecedented financial support from the EU in the field of healthcare (EU4Health programme, 2023). The EU4Health program was created to address various health-related challenges and priorities within the EU and is designed to support the health systems and policies of EU member countries. It is part of the broader EU budget and policy framework, contributing to the achievement of common health objectives. It is important to note that the European Commission has signed an association agreement with Ukrainian authorities that will open access to EU funding within the program.

The primary goals and focus areas of the EU4Health program encompass the following (EU4Health programme, 2023):

Financial Resilience of Hospitals:

- bolstering the resilience of healthcare systems in EU member states by providing financial backing for healthcare infrastructure, workforce development, and the digitalization of health services.
- organizing an effective system of financial management for hospitals (Boldt, 2020).

Resilience of Health Infrastructure:

- addressing transnational health risks to manage health crises like pandemics, strengthening health security, and fostering collaboration for readiness and response to health emergencies.
- promote healthy lifestyles and disease prevention, including a particular emphasis on mental health.
- enhancing healthcare accessibility to reduce health disparities, improve access to healthcare, and ensure that healthcare services are accessible to all EU citizens including using digitalisation as a tool.
- ensuring pharmaceuticals and medical products availability and affordability while also promoting innovation within the healthcare sector.

Healthcare Workers Resilience includes establishing a reserve of medical, healthcare and support staff to use in case of emergencies and crisis (Baskin, 2021).

The program was significantly bolstered in response to the COVID-19 pandemic, with additional funding allocated to enhance healthcare capacity, support research, and improve preparedness for future health emergencies.

Drawing from the existing body of literature the strategies for bolstering resilience within healthcare systems can be distinguished (Thomas & others, 2020; McGrow & others, 2023; Kelly, 2021; Wong, 2022):

Ensuring effective governance: clear strategic vision and adept communication between the main actors of policymaking; communication and activities coordination between government and crucial stakeholders; flexibility to learn from crisis; implementing surveillance capabilities that enable the prompt detection of shocks and their repercussions.

Providing flexible financing: ensuring the presence of adequate financial resources within the healthcare system with the flexibility to reallocate and infuse additional funds as needed.

Ensuring the availability of resources of appropriate quantity and quantity.

Providing effective service delivery: implementing alternative and adaptable approaches to healthcare delivery.

To enhance healthcare system resilience, key strategies highlight the importance of effective governance through clear strategic vision, communication, and coordination. Flexible financing, with the ability to reallocate funds, is crucial, alongside ensuring the availability of resources in both quantity and quality. Additionally, promoting effective service delivery involves implementing adaptable approaches to healthcare delivery, collectively forming a robust framework for healthcare system resilience.

Conclusions

The literature analysis shows that the healthcare systems resilience can be defined as the capacity to withstand, accommodate, adapt to and

recuperate in a prompt and effective manner. Financing of the healthcare system plays a crucial factor in the resilience of the system. It is important for the governments of EU member states to ensure the balance between the effectiveness of healthcare system and its funding. Our comparison analysis of expenditure on health per person and general effectiveness of the healthcare system as assessed by the Health Care Index in EU shows that Germany, Sweden and Ireland while having medium level of expenditures on the healthcare system did not achieve a considerable boost in healthcare systems resilience. On the contrary, Spain, Estonia and Czech Republic while spending less have achieved the same level of resilience.

There are nine countries of EU that are at the upper middle level by Global Health Security Index such as Finland, Slovenia, Germany, Sweden, Netherlands, Denmark, France, Latvia, and Spain. The rest of the countries of the European Union, are at the lower middle level by this index. The findings of the GHS study reveal a concerning trend: numerous nations, including those endowed with substantial financial means, have failed to allocate adequate resources to fortify their preparedness for pandemics. Across the board, the majority of countries have registered minimal to no progress in reinforcing the resilience, efficiency, and accessibility of their healthcare systems for early detection and effective response to infectious outbreaks.

The analysis of the data has shown that the countries with the strict measures taken by the government during the COVID-19 such as Croatia, Cyprus, Slovenia, Romania, Ireland, Italy, Greece were not corresponded to the effectiveness of the healthcare system and its resilience. So, the country healthcare resilience is not correlated to the strictness us of the anti-epidemic measures taken during the pandemic.

There should be the synergy between the state's epidemic control actions and the resilience of the healthcare system. Thus, we distinguished the factors that affected healthcare system resilience during COVID-19 pandemic in EU: a proactive preparedness to various public health emergencies; an efficient resource allocation; robust data collection and analysis capabilities; communication between healthcare authorities and the government; public trust in healthcare system; long-term planning and adaptive policymaking. So, it is safe to say that in times of crisis, state regulation of the healthcare system plays a crucial role in ensuring its resilience. In order to achieve a higher degree of the health care system resilience, it is necessary to support its following areas: financial resilience of hospitals, resilience of healthcare workers, resilience of health infrastructure.

Further scientific research will encompass the systematization of factors affecting the resilience of the health care system of Ukraine in the light of future crises.

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