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The impact of COVID-19 on European and Greek healthcare systems: an overview of public finances and healthcare challenges

Georgios F. Fragkiadakis*

Abstract

The Covid-19 pandemic has been and continues to be a major challenge for healthcare systems around the world. This health crisis has also had a profound impact on national economies, as governments have been forced to restrict their economic activities in terms of the production of goods and services. The impact of the 2020 pandemic crisis appears to have caused significant negative changes in the public finances and productivity of European states, particularly in Europe, similar to those of the economic downturn in the early 2010s. This study analyses the impact of the Covid-19 pandemic on the Greek healthcare system and economy compared to other European Union countries. The study collected data from official bodies and organisations such as the European Union, the Health Accounts, the Hellenic Statistical Authority and the World Health Organisation (WHO) to examine the impact of the pandemic on the different levels of the health system and the consequences of the health crisis and the economies in Greece and Europe. The results of the study show that Greece and the rest of Europe have faced significant problems and obstacles in maintaining health services for citizens and especially for chronic diseases. The main negative impacts were a high percentage of unmet medical needs due to the cancellation or delay of scheduled surgeries (elective procedures) and doctor visits for medical check-ups, the burden on citizens' mental health and the overall satisfaction of the health needs of non-ill people in the public health system. Barriers to citizens' access to health services were a major complicating factor for the socioeconomic and health indicators.

JEL classification: E60, H51, I18

Keywords: Healthcare, public finance, COVID-19, health inequalities, public health, unmet needs

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1. Introduction

The COVID-19 pandemic has drastically affected healthcare systems around the world (OECD/European Union 2020; Filip 2022). European and Greek healthcare systems have faced unprecedented challenges since the outbreak of the pandemic (Lupu, 2022). The impact of the pandemic on these healthcare systems is complex and affects the availability of resources, the provision of care and the general well-being of the population (Chemali, 2022).

Several studies (Cho, 2016; Hanefeld, 2018; Armocida, 2020; Poon, 2022; Elliott, 2023; Jack, 2023) have shown that most countries suffered from a shortage of medical staff before and during the pandemic. The healthcare systems of several countries had a similar problem with the supply and reserves of essential medical supplies and medicines (OECD/European Union, 2022). The main cause of the above-mentioned effects that occurred during the pandemic and continue to this day was the underfunding of healthcare systems at global and European level (WHO, 2009; Onofrei, 2021; Țăran, 2022). In Greece in particular, an important factor affecting citizens' access to the Greek healthcare system was the gradual reduction and horizontal cut in funding for the public healthcare system following the global financial crisis of 2009, which led to a drastic decrease in the necessary recruitment of healthcare staff (Economou, 2015; Bank of Greece, 2019; OECD, 2020; Kalavrezou, 2021). Considering the data of the existing NHS in terms of human resources and the ability of the Greek healthcare system not to collapse, as was the case in other European countries, the government was forced to adopt drastic solutions and a whole series of emergency measures. The Greek government was forced to hire massive numbers of staff to strengthen the national healthcare system so that it could take up the fight against the pandemic on both the prevention and treatment fronts (Giannopoulou, 2020).

The European Union initially responded mainly with public health measures aimed at finding a suitable vaccine, limiting the closure of borders, repatriating citizens stuck in third countries and, of course, supporting the affected areas economically and in the fight against misinformation (European Commission. 2020; ECDC. 2020). However, each Member State was solely responsible for organising and financing its national health system, as the support framework provided by the EU is based on recommendations aimed at jointly addressing and coordinating national measures (Brooks, 2020).

Recent data from European healthcare systems show that they are unable to cope with the demand for healthcare services, leading to serious inequalities in access and healthcare provision for citizens (Baeten, 2018; Biel, 2022; OECD/European Union, 2022; Pujolar, 2022). The imposition of closures during the Covid-19 pandemic had one main goal: to prevent hospital overcrowding (Janiak, 2021). Governments hoped that this solution would limit the number of infections and buy time to meet the increasing need for hospitalisation for people infected with Sars-COV-2. However, as a result, these barriers to accessing healthcare services have led to greater problems, such as an increase in the percentage of people with unmet medical needs (OECD/European Union, 2022; Pierrakos, 2023). In addition, the disruption of healthcare during the pandemic led to a surge in the number of patients undergoing cancer treatment and elective (non-exceptional) surgery (WHO, 2020). The pandemic also had an impact on primary care,

screening and the continuation of care for people with chronic conditions, especially during hospitalisation (Danhieus, 2020; Hacker, 2021; Khalil-Khan, 2023; Tafti, 2023).

The aim of our study is to analyse the differential impact of the COVID-19 pandemic on access to healthcare, focusing on Greece compared to other countries in the European Union. In the literature, we find studies that have focused on Greece after the pandemic and analyse the impact on the Greek healthcare system. Some of these studies refer to the impact of the pandemic on the mental stress of healthcare workers (Blekas, 2020; Fountoulakis, 2020; Pappa, 2021; Latsou, 2022), some on mortality rates (Routs, 2020; Panagiotakos, 2021; Kondilis, 2021), some on the mental health of citizens (Dagklis, 2020; Fountoulakis, 2021; Karaivazoglou, 2021; Magklara, 2022) and some on the socio-economic impact (Giannopoulou, 2020; Fouda, 2020; Kousi, 2021; Kalavrezou, 2021; Zevras, 2022; Pierrakos, 2023). Our research focuses on the relationship between public finances and public health in a period of economic uncertainty caused by the reduced economic activity in Greece and Europe due to the restrictions imposed by the pandemic. The aim of this study is to shed light on and substantiate the relationship between the health status of citizens and the country's public finances by complementing the previous surveys with additional insights and in-depth analyses.

In particular, studies have shown that improvements in healthcare can lead to an increase in gross domestic product (GDP) and vice versa (Kurt, 2015; Piabuo, 2017; Raghupathi, 2020). Furthermore, public healthcare can be negatively affected when a country's economy is in trouble, for example during a recession or when interest rates rise (Economou, 2015). In this case, the government may not be able to spend as much money on healthcare as needed, resulting in people having limited access and receiving poorer treatment (Foroughi, 2022), as already seen in Greece during the economic recession (Kalafati, 2012; Niakas, 2013; Simou, 2014). COVID-19 has also had a profound impact on global economic and financial markets and has also become a global pandemic and public health emergency (Naseer, 2023). The measures taken in many countries to contain the disease have led to significant income losses, as has been the case in the Greek economy (OECD, 2020), an increase in unemployment and disruptions in the transport, services and manufacturing sectors (Pak, 2020; Naseer, 2023). In particular, the economic conditions that prevailed during the Covid-19 pandemic have significantly affected the health of the population in many countries (Kolahchi, 2021). Many factors have contributed to this impact, such as economic insecurity, restrictions on social activities and limited access to health services (Pak, 2020; Kolahchi, 2021; Foroughi, 2022; Naseer, 2023).

Based on the above-mentioned literature review, we put forward several hypotheses to analyse the impact of the pandemic and economic uncertainty on access to healthcare in Greece compared to the European region. First, we hypothesise that the impact of the pandemic on access to healthcare and healthcare services is very different in Greece and other European Union countries, as 37% of Greeks (Hellenic Statistical Authority, 2021) reported having had a health problem that required medical examination or treatment in the last 12 months but did not seek it due to the COVID-19 pandemic. In contrast, the average percentage of European adults in the Europe region who reported an unmet need for medical care

increased from 20% in 2021 to 23% in 2022 (Ahrendt et al., 2022). Second, we hypothesise that increased healthcare funding will be associated with a greater capacity of healthcare systems to respond effectively to the pandemic, as recommended by the OECD (OECD, 2023). Third, we hypothesise that negative changes in economic indicators such as GDP and public debt will be associated with a reduced ability of healthcare systems to meet medical needs, as reported in other studies (Economou, 2015; Recio, 2022). Fourth, we hypothesise that the prevalence of unmet medical needs is higher in Greece compared to other European Union countries (Eikemo, 2018; Pierrakos, 2023; Eurostat 2023b), as Greece is in a period of prolonged recession and austerity measures with far-reaching socio-economic, demographic and political implications (Stylianidis, 2019). Finally, we hypothesise that higher poverty rates are associated with a higher prevalence of unmet medical needs during the pandemic (Jung, 2022; Rahman, 2022; Zavras, 2022). By critically analysing key indicators, including data on life expectancy and unmet medical needs, we aim to shed light on the challenges faced by healthcare systems and economies in coping with the ongoing pandemic crisis.

In the following sections, after an introduction to the methodology, the economic data that prevailed during the pandemic are presented and critically analysed, with a focus on public finances and the development of public debt in Europe and Greece. The following sections then analyse some key indicators to assess the level of public health in European countries, focusing on the Greek healthcare system and examining in particular the changes in life expectancy and the data on unmet medical needs. At the end of the study, we summarise the implications for policy, health practise and public health, the severe impact and challenges for health systems due to the outbreak of the pandemic and the negative conditions for the public finances of European countries.

2. Methodology

Research design: This study applies a comparative analysis approach to analyse the impact of the COVID-19 pandemic on healthcare systems and economies in Greece and other European Union (EU) countries. The research design involves collecting and analysing data from official sources to assess the impact of the pandemic on healthcare services, public finances and overall health outcomes.

Data sources: Data for this study were primarily obtained from reputable institutions and organisations such as the European Union, Health Accounts, Hellenic Statistical Authority and the World Health Organisation (WHO). These sources provided comprehensive data sets on healthcare expenditure, public finances, accessibility of healthcare and health outcomes in Greece and other EU Member States.

Selection criteria: The selection of data sources was based on their reliability, relevance and availability of comprehensive information on the impact of the COVID-19 pandemic on healthcare systems and economies. Only data from official bodies and organisations were considered to ensure the accuracy and validity of the results.

Analytical techniques: The collected data was subjected to both qualitative and quantitative analysis methods. Quantitative analysis analysed trends in public finances and health outcomes before and after the outbreak of the COVID-19 pandemic.

2.1 Descriptive statistics analysis

In this study, a descriptive statistical analysis was conducted to examine the trends and comparative dynamics of key socioeconomic and healthcare indicators in Greece and Europe over the specified time period. The dataset included a wide range of variables, including annual GDP growth rates by country, balance of payments, GDP and public debt growth in absolute terms, unmet medical needs in Greece and Europe (annual average) and the percentage of people at risk of poverty or social exclusion in Greece and Europe. For each variable, descriptive statistics such as mean values, minimum and maximum values and percentiles were calculated to show important trends and fluctuations within the data set. The focus was on identifying trends, fluctuations and inequalities in these socio-economic and healthcare indicators over the study period. Comparisons were also made between Greece and Europe to identify differences and similarities in these indicators. By comparing averages and trends across the two regions, this analysis aimed to provide insights into Greece's relative performance in terms of economic growth, healthcare and social wellbeing compared to its European counterparts. The use of descriptive statistics enabled the data set to be comprehensively summarised and analysed, providing valuable insights into the socio-economic and healthcare landscape of Greece and Europe over the specified period.

Qualitative technique - search strategy and criteria: In order to conduct a comprehensive analysis of the impact of the COVID-19 pandemic on European and Greek healthcare systems, a qualitative technique focusing on key themes identified through a systematic literature review was applied. The search strategy comprised four main themes: "healthcare", "public finances", "COVID-19" and "health inequalities". Relevant studies and reports were identified via electronic databases such as PubMed, Google Scholar and relevant institutional websites, using a combination of keywords and logical operators ("AND", "OR", "NOT") to refine the search results. The inclusion criteria included studies published between 2019 and 2023 addressing the impact of the pandemic on healthcare provision, resource allocation, financing mechanisms and health inequalities in the European and Greek context. In addition, studies addressing the socio-economic impact of the pandemic on healthcare systems were also considered to provide a holistic understanding of the challenges. Through a qualitative synthesis of the literature, key themes and trends related to the impact of the pandemic on healthcare systems and public finances were identified, allowing for in-depth examination of the multi-layered challenges.

Synthesis: The results of the quantitative analysis were supplemented by qualitative findings from the literature review. The aim of synthesising the data was to identify common trends, patterns and inequalities in the impact of the pandemic on healthcare systems and economies across Europe, with a focus on Greece. The methodology applied in this study provides a comprehensive framework for understanding the multi-layered impact of the COVID-19 pandemic on healthcare systems and economies

in Europe. By integrating data from multiple sources and applying rigorous analytical techniques, this study makes a valuable contribution to the ongoing discourse on healthcare crisis management and policy formulation.

3. The economic impact of the pandemic in Europe and Greece

3.1 The impact on Europe's GDP

The pandemic has largely shaken Greek society and the economy. On an economic level, it has had a significant macroeconomic, financial, and fiscal impact, the costs of which are not evenly distributed. Basic measures of the economy such as gross domestic product (GDP), public debt, the general balance sheet and the balance of goods and services were dramatically affected in the 2020 financial year, reaching, or exceeding the negative values of the 2009 financial crisis. The same effects of the recent pandemic can be observed worldwide and especially in the countries of the European Union.

In March 2020, the Greek economy experienced the second major economic downturn in its recent history. According to ELSTAT (2022) data, GDP fell by 11.7% in the third quarter of 2020, putting it at -8.5% in the nine-month estimate, lower than Eurozone member states such as Italy (-9.5%), France (-9.5%) and Spain (-11.5%). As shown in the annual data in Table 1, the GDP of Greece, Spain and Italy was -9.3%, -11.2% and -9.0% respectively in 2020, recording the largest negative changes in GDP among the 19 Eurozone countries (Eurostat, 2023a). The countries that appeared to be negatively affected by the change in GDP and follow the previous countries are Malta, Portugal, Austria, and France.

Table 1: Annual GDP by country (percentage change)

	2019	2020	2021	2022
Euroarea - 19 countries	1,6	-6,1	5,9	3,4
Belgium	2,2	-5,3	6,9	3,0
Germany	1,1	-3,8	3,2	1,8
Estonia	4,0	-1,0	7,2	-0,5
Ireland	5,3	6,6	15,1	9,4
Greece	1,9	-9,3	8,4	5,6
Spain	2,0	-11,2	6,4	5,8
France	1,8	-7,5	6,4	2,5
Italy	0,5	-9,0	8,3	3,7
Cyprus	5,5	-3,4	9,9	5,1
Latvia	0,6	-3,5	6,7	3,4
Lithuania	4,7	0,0	6,3	2,4
Luxembourg	2,9	-0,9	7,2	1,4
Malta	7,1	-8,1	12,3	6,9

Netherlands	2,0	-3,9	6,2	4,3
Austria	1,5	-6,6	4,2	4,8
Portugal	2,7	-8,3	5,7	6,8
Slovenia	3,5	-4,2	8,2	2,5
Slovakia	2,5	-3,3	4,8	1,8
Finland	1,2	-2,4	3,2	1,6

Source: Eurostat (2023), author's calculations.

3.2 The impact on GDP on the Greek economy

The main reason for the negative rate of change in Greek GDP was initially the sharp decline in business activity in the services sector during the lockdown (IOBE 2021). At the same time, there was a global stock market crash (especially in the first year of the pandemic) and then an unprecedented global supply chain crisis triggered by rising prices and shortages of finished and intermediate goods. An important feature of the pandemic was the sharp decline in population mobility, which led to a recession in tourism, trade in travel services and consumption by non-residents. The major impact on the decline in tourism in Greece is partly reflected as a component in the size of GDP, as can be seen in Figure 1 in 2020, which is almost three percentage points higher compared to the average of 19 countries in Europe.

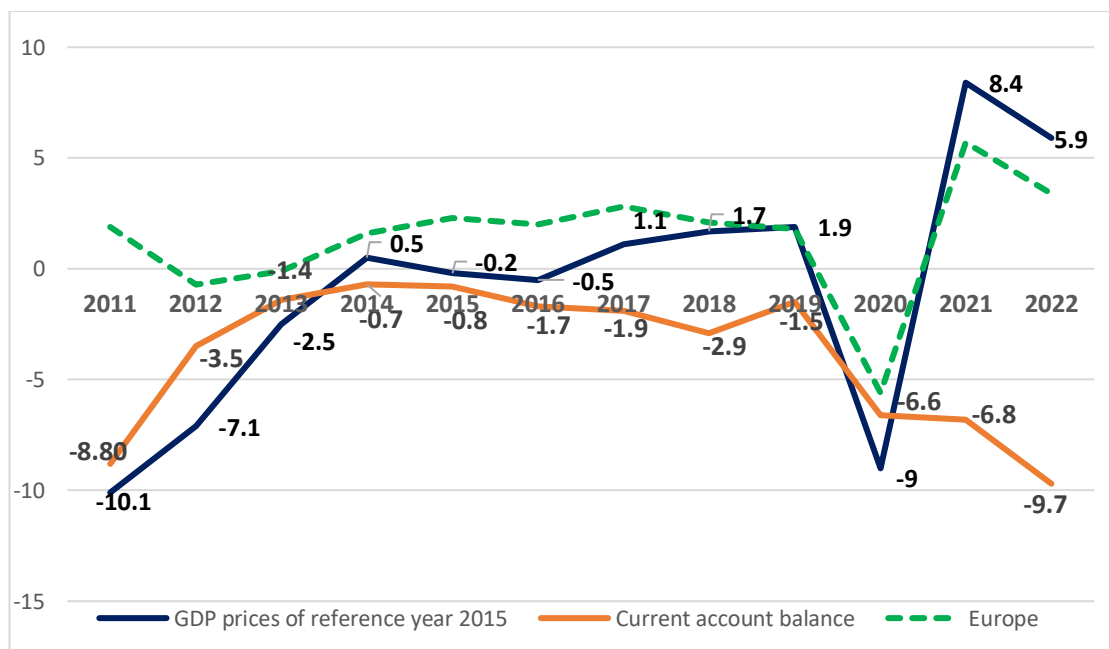
According to the Bank of Greece's 2020 report, the countries that form the main markets for travellers have experienced a loss of income and at the same time a significant number of disease outbreaks, which has led to a tendency to avoid cross-border travel, but most travellers have come from the usual countries of origin. The sharp decline in tourism has also had an impact on income. According to the report of the Institute of the Hellenic Tourism Business Association (INSETE, 2021), travel income in 2020 fell by -76.5% compared to 2019 and totalled 4,280 million euros. This decrease is attributable to -70.8% (2,840 million euros) in revenue from the EU-27 and -82% in revenue from the non-EU-27 (1,434 million euros). Specifically, revenue from Germany fell by -61.6% (1,135 million euros), while revenue from France fell by -66.3% (367 million euros), from countries outside the EU-27 by -70.8% (749 million euros), from the USA by -93% (83 million euros) and finally from Russia by -96.9% (14 million euros). According to the latest INSETE report (INSETE 2023), travel income fell by -41.4% in 2021 and totalled 10,653 million euros. This decrease is due to a -29.1% drop in revenue (6,895 million euros) for residents of EU-27 countries and -54.8% for residents outside the EU-27 (3,596 million euros).

3.3 Current account balance of greece

The current account is the most important account in the balance of payments and reflects the financial strength of a country compared to others. Greece is strongly affected by this because, as already mentioned, it is based on income from services. First, a closer look at Figure 1 shows that the change in the current account index after 2020 shows a dramatic decline, which cumulatively amounts to more than -23% by 2022. Specifically, the current account balance deteriorates significantly in 2022 with a deficit of €20.1bn, compared to €12.3bn in 2021, €11.1bn in 2020 and only €2.7bn in 2019 (Bank of Greece, 2020).

However, we note that the current account has remained negative since the global economic downturn and the economic crisis in Greece but worsened after the pandemic emerged. As it turns out, according to the Governor (Bank of Greece, 2020), the large deficit is a major problem for the Greek economy and could cause major problems for the Greek economy in the future, especially in a lower growth environment. The balance of payments deficit of 2.9% of GDP in 2018 and 1.5% of GDP in 2019 climbed to 6.8% in 2021 and was revised upwards to around 10% in 2022 (almost 20 billion euros). It is worth noting that this start is partly due to increased fuel prices and the rapid recovery of GDP losses due to a pandemic. The problem with the high current transaction deficit is that it shows that the country is entirely dependent on imports and is therefore exposed as an economy not only to high foreign debt but also to international crises.

Figure 1: GDP Growth Rate Greece vs Europe and Balance of Payments 2011 – 2022



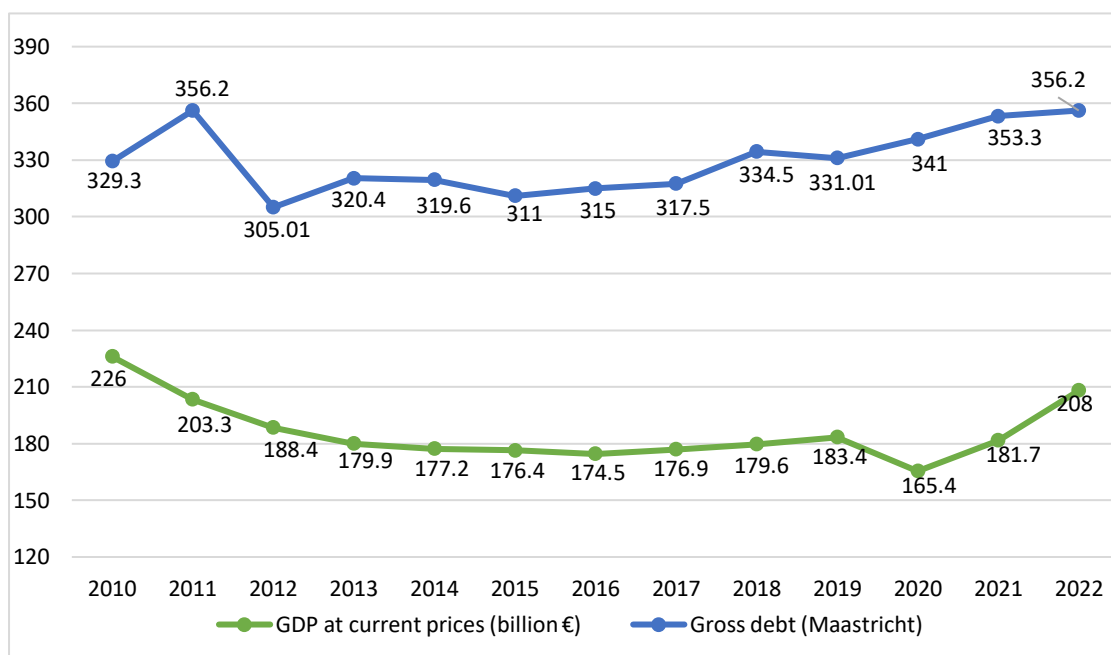
Source: ELSTAT (2023).

3.4 Public debt and GDP

While the economy seemed to recover slightly from the major downward spiral of 2009-2016 and focused on development reforms (Theodoropoulou, 2022), especially after the 2019 elections, the new economic crisis triggered by the coronavirus pandemic in 2020 had an impact on Greek public debt. In contrast to 2010, the crisis finally mobilised the EU to support the Recovery and Resilience Fund (European Commission 2023), a temporary Community budget mechanism worth €672.5 billion. On 13 July 2021, the first 12 EU countries - Austria, Belgium, France, Germany, Denmark, Greece, Spain, Italy, Latvia, Luxembourg, Portugal, and Slovakia - were given the green light. They are allowed to use the EU Recovery and Longevity Funds to boost their economies and recover from the effects of the COVID-19 disease. These funds have certainly contributed to some of the impact of the crisis on the real economy

and the public debt of Member States with budgetary constraints such as Greece. However, the recession and the budgetary costs of the measures to combat the pandemic have led to a sharp increase in public debt, not only in Greece but also in the rest of the world. As can be seen in Figure 2, the development of public debt in absolute prices, Greece has a debt of 356.2 billion euros in 2022, which corresponds to the debt during the financial crisis and especially in 2011. This magnitude, which has a negative impact on the country's public-economic position compared to the other Eurozone countries, is due not only to the consequences of the pandemic crisis, but also to the energy crisis. The same figure (Figure 2) shows the positive development of the country's GDP, which, according to Eurostat and the Hellenic Statistical Authority, will amount to 208 billion euros in 2022.

Figure 2: The growth of GDP and public debt in absolute prices (Greece, billion euros)



Source: ELSTAT (2023), author's calculations.

4. The impact of the pandemic on healthcare systems in Europe and Greece

The Covid-19 pandemic has had a profound impact on healthcare systems in Europe, with far-reaching consequences for healthcare services and the health of citizens. If we summarise previous reports and studies (OECD/European Union 2022, Filip 2022, Crowley 2021, WHO 2021, OECD/European Union 2020) on the most serious impacts on healthcare systems in Europe and Greece, we can focus on the following critical points.

1. *Increased demand for healthcare services:* The Covid-19 pandemic has led to an unprecedented increase in demand for healthcare services, as hospitals and healthcare structures have had to focus on the resources available to them to cure many Covid-19 patients. This increased demand has put pressure on healthcare systems and led to delays in healthcare for patients unrelated to COVID-19,

such as cancer treatments, regular primary care appointments and regularly scheduled operations (which are not emergencies), such as orthopedic surgery.

2. *Shortages of medical supplies and equipment:* The Covid-19 pandemic has led to shortages of medical supplies and equipment, including personal protective equipment (PPE) and respirators. This shortage has further strained healthcare systems and led to an increased risk of infection for medical staff. The deficiencies in basic means of protecting medical personnel have revealed the weakness and lack of proper management of health and equipment reserves and generally highlighted problems in the supply chain for essential medical supplies to meet immediate medical needs.
3. *Changes in healthcare provision:* The Covid-19 pandemic has led to changes in the way healthcare services are delivered. For example, many routine appointments and operations have been postponed. Countries that had developed and introduced digital solutions for healthcare and monitoring patients in need were less affected. Countries that have managed to introduce telemedicine systems in recent years have been less affected in terms of coverage and care for citizens' healthcare needs, while other countries have had problems with timely access for citizens and their healthcare needs. Another element of digital health is that it has been an important factor in reducing or limiting the risk of infection from Covid-19.
4. *Increased mental health needs:* The Covid-19 pandemic has led to increased mental health needs as people are exposed to the stress and strain of the pandemic. This has put pressure on mental health services, which were already inadequate in many European countries. The pandemic crisis has led to great uncertainty among European citizens due to economic instability and an unfavourable economic environment in several economic sectors. Uncertainty in the labour market and income restrictions have led to more serious problems for citizens' health than the virus itself. In particular, the increase in stress and anxiety due to the negative climate in the production of goods and services has led to significant problems for the mental health of citizens. Especially in the case of Greece, whose economy is mainly based on tourism (services), the period of the pandemic has led to significant problems in tourism employment, as travelling between countries and the local population has been restricted or banned.
5. *Inequalities in access to care:* The Covid-19 pandemic has highlighted existing inequalities in access to healthcare, with vulnerable populations such as the elderly or people with pre-existing conditions at higher risk of serious illness or death. In addition, some population groups, such as immigrants or people living in poverty, may face barriers to accessing healthcare services during the pandemic. Another category of citizens that was severely affected were low-income citizens compared to high-income citizens. Unfortunately, Greece remains one of the countries in the European Union with the highest percentage of people who do not have access to healthcare, be it because of the cost or the long distances and waiting times for a check-up. In the next section, the problem of unnecessary healthcare in Europe and Greece will be discussed in detail.

6. *Challenges for public health infrastructure:* The Covid-19 pandemic has highlighted the importance of strong public health infrastructure, including disease surveillance systems and effective public health communication and information. Countries with weaker public health infrastructure may find it difficult to respond effectively to the pandemic and prevent the spread of COVID-19. A critical factor in dealing effectively with the pandemic is the preparedness of healthcare systems, both in terms of emergencies and the availability and knowledge of the right personnel for healthcare services. As the research on the preparedness of healthcare systems to respond to health threats has shown, the most important factor that improved the resilience of healthcare systems was the sufficient availability of adequate numbers of health workers. Greece was forced to invest considerable sums in the financing of health services in regular or exceptional health personnel due to the low coverage of health personnel (doctors and nurses).

5. Post-COVID challenges on Greek healthcare system

Greece, like many other countries, has been trying to cope with the difficulties and consequences of the pandemic crisis, which has not only revealed the weaknesses of its healthcare system, but also exacerbated them. The impact of the pandemic on the Greek healthcare system has not only revealed the serious problems in the availability of the necessary healthcare infrastructure and medical potential (OECD 2020) but has also uncovered and exacerbated two serious problems that directly affect the level of Greek healthcare. The first concerns the unmet medical needs and the second the negative impact on the country's life expectancy (OECD, 2021).

5.1 Unmet medical need

The Covid-19 pandemic has pushed the Greek healthcare system to its limits. The public hospitals of the national healthcare system faced unprecedented conditions and challenges, such as the dramatic increase in patient numbers, the lack of medical supplies and the exhaustion of medical staff. This not only affected patients with COVID-19, but also led to a delay in the treatment of non-Covid cases as healthcare system resources were made available for the treatment and management of cases. This has led to the existing unmet medical need becoming even greater (Pierrakos, 2023).

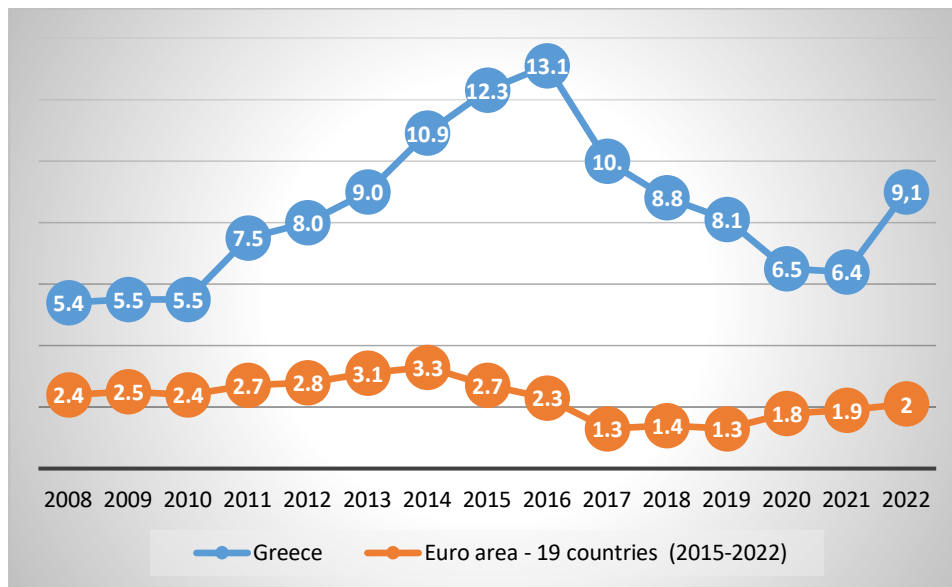
In addition, government decisions during the pandemic have focused on fighting the pandemic, resulting in the treatments of various medical cases being delayed or postponed. Patients with chronic diseases such as cardiovascular disease, diabetes and cancer experienced disruptions or interruptions in healthcare (WHO, 2022a; WHO, 2022b). Scheduled radioscopic examinations, selected (non-exceptional) surgeries and several screening tests were postponed, contributing to an increase in the percentage of unacceptable medical needs.

The pandemic in Greece has exacerbated existing health inequalities, particularly among vulnerable populations such as refugees, immigrants (Kondilis, 2021) and people of low socio-economic status, who have faced additional barriers in accessing healthcare. Pressures on the healthcare system have widened

the gap between those who can afford private healthcare and those who rely on the public system, leading to inequalities in the impact of healthcare.

Figure 3 shows the significant differences between Greece and the average of 19 countries in the European Union over the last 14 years. It is noteworthy that the reported unmet need for healthcare in Greece after the pandemic (2022) was at the same level as during the financial crisis after the implementation of fiscal measures (2009-2012).

Figure 3: Unmet medical need in Greece versus Europe



Source: Who, Health Equity Assessment Toolkit, (Heat), author's calculations.

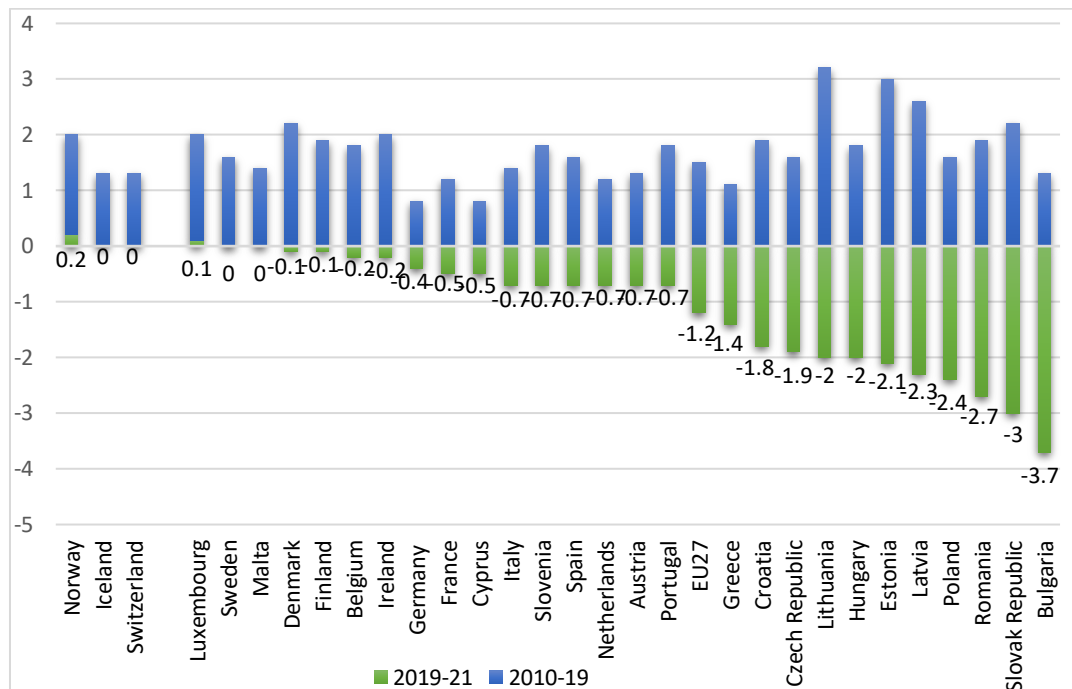
5.2 Life expectancy, mental health, and the risk of poverty

One of the most immediate and serious effects of the Covid -19 pandemic on life expectancy is the direct impact on mortality rates. The virus affected all age groups, especially the elderly and people with pre-existing conditions. The loss of life due to Covid-19 has affected the overall mortality rate and therefore life expectancy in Greece (OECD/European Observatory on Health Systems and Policies 2021).

The pressure exerted on the country's healthcare system during the pandemic not only affected patients with COVID-19, but also impacted the healthcare system as a whole. Delayed or cancelled medical treatments and diagnoses have led to negative health consequences, especially for long-term patients. Difficult access to medical care and support has led to deterioration in population health of the population and impaired their life potential. A look at Figure 4 shows the serious impact of the pandemic crisis on life expectancy in several countries and particularly in Greece, which appears to have lost around 1.5 years. This loss shows that the health and well-being of the Greek population is being seriously affected or hindered. The reasons that have led to this, as mentioned in this study, are obviously linked to both access to healthcare, the prevailing socio-economic conditions, and the impact on the mental health of individuals. Mental stress and pandemic-related sadness can have long-term consequences for mental wellbeing. Mental health is linked to overall health, and the long-lasting effects of the pandemic on

mental health can reduce life expectancy. According to the WHO (2023), the results of the Health Equity Assessment Tool show that the 18-24 age group is more affected by mental health, especially in the second wave of the pandemic in Greece around 2021.

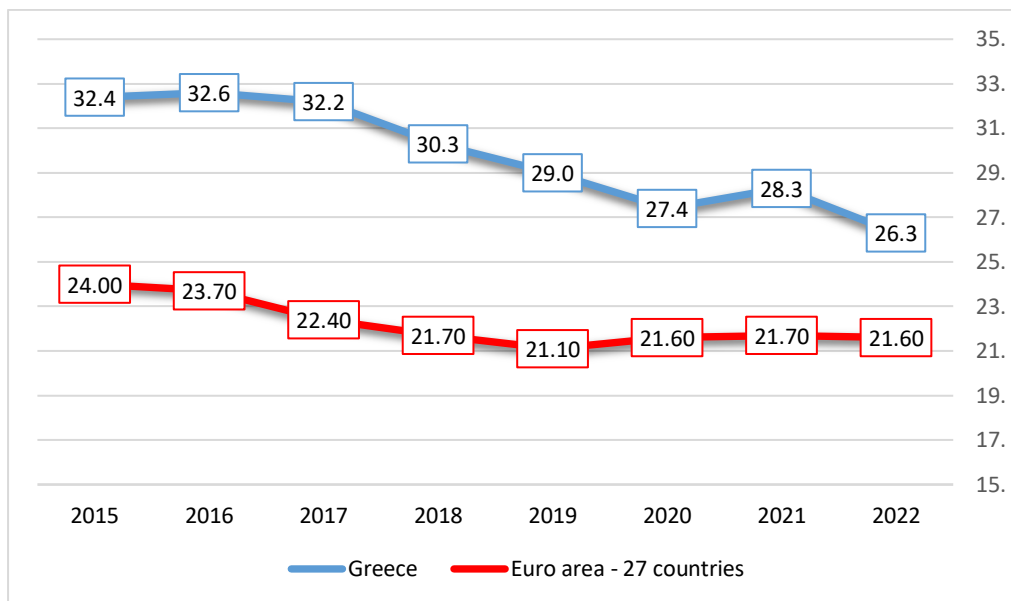
Figure 4: Gains or declines in life expectancy 2019-21 and 2010-19



Source: Eurostat Database (2023).

The unfavourable economic environment resulting from the pandemic has led to social and economic inequalities that can affect life expectancy. Unemployment, financial instability, and higher levels of poverty can contribute to poorer health outcomes. People struggling with financial difficulties can face barriers in accessing healthcare, medication, or the necessities for a healthy lifestyle. In Greece, according to WHO (2023) the proportion of people at risk of poverty or social exclusion has been well above the European Union average for seven years (Figure 5).

Figure 5: Percentage of people at risk of poverty or social exclusion, Greece vs Europe



Source: WHO (2023), author's calculations.

6. Conclusions

This study focused on the impact of the COVID-19 pandemic on public finances in Greece and Europe to examine the impact on the provision of public health services and healthcare to citizens during the pandemic. The study shows a significant decline in population health with an average decrease in life expectancy of 1.2 life years in Europe and 1.4 life years in Greece between 2019 and 2021. This decline is attributed to the inability of healthcare systems to provide the necessary services. During the pandemic, the percentage of people unable to meet their medical needs increased from 1.3% in 2019 to 2% in 2021 in Europe and from 6.5% to 9.1% in Greece. The pandemic has also had a significant impact on public health and socio-economic conditions. For example, 28.3% of Greek citizens lived below the poverty line, compared to 21.7% of European citizens. The unfavourable economic environment during the pandemic has meant that healthcare systems have not been able to meet the health needs of citizens.

Considering the above, the Covid-19 pandemic has exposed the weaknesses of the Greek healthcare system. The lack of adequate resources, the outdated technology and the insufficient number of healthcare professionals were serious obstacles to the effective management of the world's latest health crisis. Investment in healthcare and workforce development is critical to addressing current and future crises that primarily affect the health and well-being of citizens. As identified in this study, the unfavourable economic environment and the negative impact of critical public indicators such as debt and GDP contribute negatively to access and coverage of unmet medical needs. Greece, like many other countries, is facing major challenges in meeting medical needs after the Covid-19 pandemic. The main problems include pressure in the healthcare system, delayed medical care, the mental health crisis, health inequalities and inadequate infrastructure. Addressing these challenges requires a comprehensive approach that requires increased investment in healthcare, strategic planning and a commitment to building a more sustainable healthcare system. Addressing the pandemic crisis requires a health policy

that prioritises health reforms to ensure that the unmet medical needs of the population are adequately met. These findings emphasise the importance of investing in healthcare systems and public health infrastructure to ensure an effective response to future public health emergencies.

The findings of this study have important implications for policy makers, healthcare professionals and stakeholders involved in the management of the healthcare system, particularly in Greece and across Europe. First, the identified weaknesses of the Greek healthcare system emphasise the urgent need for policy measures aimed at strengthening the healthcare infrastructure, improving access to healthcare services and eliminating inequalities in healthcare provision. Policy makers should prioritise investment in healthcare resources, improving technology and workforce development to build a more resilient and responsive healthcare system capable of effectively managing future health crises. Secondly, healthcare professionals must adapt to the changing healthcare landscape brought about by the pandemic. The use of digital health solutions, telemedicine platforms and innovative care models can mitigate the disruption caused by the pandemic and ensure continuity of care for patients. Third, in terms of public health impact, strengthening public health infrastructure, including disease surveillance systems and public health communication strategies, is critical for effective pandemic preparedness and response. Public health authorities should work with healthcare providers and community organisations to implement proactive measures to prevent the spread of infectious diseases and protect public health.

It is important to acknowledge the limitations of this study, which may affect the generalizability and interpretation of the results. The analysis relies on secondary data from official sources, which may be subject to biases or inaccuracies inherent in reporting mechanisms. In addition, the scope of the study may be limited by the availability and completeness of data from different countries and regions. Furthermore, the results of this study are placed in the context of the specific socio-economic and healthcare situation of Greece and Europe. Therefore, the transferability of the results to other regions or healthcare systems may be limited by contextual factors that are unique to each setting.

Building on the results of this study, future research directions could include long-term studies that track the course of recovery and resilience of the health system after the COVID-19 pandemic and provide valuable insights into the effectiveness of policy interventions and healthcare reforms. In addition, comparative analyses between different healthcare systems can reveal differences in pandemic response strategies, healthcare care delivery models and health outcomes, and provide lessons for improving preparedness and resilience in the face of future health crises. Finally, qualitative research that explores the experiences and perceptions of healthcare stakeholders, including patients, healthcare workers and policy makers, can provide nuanced insights into the different impact of the pandemic on healthcare systems and enable targeted interventions.

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