MEDITERRANEAN BASIN IN THE COVID-19 CRISIS HAS THE IMPACT OF THE COVID-19 CRISIS BEEN DIFFERENT FOR THE DIFFERENT POPULATIONS OF THE REGION?

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1. Introduction

Divided among the three continents of Europe, Asia and Africa, for a long time the Mediterranean formed an interrelated context or a "world economy": an area of the globe where economies, cultures and societies interacted with one another (Braudel, 2017). Even today, within the global economy, the Mediterranean countries are joined together both by flows of production factors and trade of goods. Massive legal and illegal flows of people daily move from the less developed southern and eastern economies towards the North of the Mediterranean (Salvini, 1990). The trade of goods between the EU and the MEDA (Mediterranean countries in the Euro-Mediterranean Partnership) represents in 2015 around 9 percent of the total EU external trade (European Commission, 2015)[1]. Energy sources play a central role in these exchanges. The EU nations are the main investors in the countries of southern Mediterranean (Daniele and Malanima, 2016).

«There can no longer be any doubt, COVID-19 has pushed us into a new era. We must ask, how the Mediterranean region, and the world, can come together to emerge from the global crisis stronger and more resilient. The outbreak of COVID-19 is certainly one of the greatest crises we face in over a century and serves as a stark and uncompromising reminder of the need for tangible cooperation across borders, between sectors and among citizens and their representatives». These are the words of Nasser Kamel, the Secretary General of the Union for the Mediterranean (2020).

[1] The Union for the Mediterranean aims to establish a common area of peace, stability, and shared prosperity in the Euro-Mediterranean region. EU-Southern Mediterranean relations at bilateral level are managed mainly through the Euro-Mediterranean Association Agreements.

- Nearly all countries have concluded Association Agreements with the EU. Preparations are going to deepen these agreements through the establishment of deep and comprehensive free trade areas.
- Negotiations for a Framework Agreement between the European Union and Libya are currently suspended.
- Steps towards the signature of the initialled Association Agreement with Syria are currently suspended.

More than 10,1 million COVID-19 cases and 202,121 deaths have been reported from 22 countries across WHO's Eastern Mediterranean Region since the first documented case on 29 January 2020. "This is a troubling milestone for everyone in our Region. Despite all our efforts over the past 16 months, we have not yet controlled the pandemic and there is much work to do. We all have a role in reducing infections and deaths by acting responsibly to protect ourselves and our loved ones", said Dr Ahmed Al-Mandhari, WHO Regional Director for the Eastern Mediterranean (WHO, 2021).

The Institute for Health Metrics and Evaluation noted a threefold increase in the number of deaths in the region between September and December 2020, with COVID-19 projected to become the fourth leading cause of death by early 2021. Yet significant discrepancies in both indicators and quality of data reported across the MENA region limit our understanding of the scope and the implications of the pandemic in the Arab context. The MENA region is distinctly conflict-affected and displacement-affected, which may foster unique vulnerabilities to SARS-CoV-2 transmission and illness severity. Low testing rates, limited data on excess mortality and poor vital registration systems, which are further weakened in the context of chronic political unrest, all contribute to consistent under-reporting in the region. In contrast to other regions, most Arab countries in MENA region do not publicly report comprehensive and disaggregated epidemiological data on COVID-19. Comprehensive and reliable data are essential in understanding the implications of the health crises, generating meaningful epidemiological research and developing prompt and contextualised responses (Wehbe *et al.*, 2021). Problems of data instead do not affect the countries of southern Europe, such as Italy.

2. The diffusion of COVID-19 in the two shores of Mediterranean Sea

As of 30 May 2021, almost 63% of all COVID-19 cases were reported from Islamic Republic of Iran, Iraq, Jordan, Pakistan and United Arab Emirates, and about 72% of total deaths were reported from Islamic Republic of Iran, Pakistan, Iraq, Egypt and Tunisia.

Table 1 reports some figures of the disease around the end of 2020. Most countries saw fairly slow transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) during the early months of the pandemic but in May, as social measures, such as restrictions and partial or full lockdowns, were relaxed during the holy month of Ramadan, disease transmission accelerated.

After a small reduction in the summer, cases increased in late August as disease surged in countries, such as Jordan and Tunisia, where transmission had been low earlier in the year (Al-Mandhari *et al.*, 2020).

Table 1 – *Cases of COVID -19 in the Eastern and Southern shores of Mediterranean Basin (end of 2020).*

Country	Daily Cases	Deaths	Cases	Cases/million	Lethality Rate
Algeria	138	3,130	118,516	2,756.19	2.60%
Bahrain	1,060	557	156,462	10,138.146	0.40%
Egypt	812	12,445	210,489	2,101.90	5.90%
Iraq	6,791	14,713	924,946	23,639.04	1.60%
Jordan	3,340	7,773	665,735	62573,43	1.20%
Kuwait	1,390	1,407	247,094	55.902,23	0.60%
Lebanon	2,213	6,661	496,846	72.793,23	1.30%
Libya	937	2,823	167,825	24,424.10	1.70%
Mauritania	10	450	18,022	4,420.03	2.50%
Morocco	414	8,900	502,102	14,008.29	1.80%
Palestine	2,235	2,860	268,132	53.877,64	1.10%
Saudi Ar.	799	6,754	398,435	11,643.96	1.70%
Syria	108	1,378	20,226	1,155.73	6.80%
Tunisia	1,564	9,293	271,861	23,192.30	3.40%
UAR	1,810	1,531	483,747	48,910.76	0.30%

Source: Global Health Institute 2021. ° Number of cases per million inhabitants. Ratio of deaths per 100 cases of disease.

Table 2 – *Cases of COVID -19 in the Northern shore of Mediterranean Basin.*

Country	Cases of Covid	Deaths by Covid	Lethality rate by Covid
Croatia	292,516	6,308	2.16
Cyprus	51,505	272	0.53
France	5,058,680	98,778	1.95
Greece	295,480	8,885	3.01
Italy	3,769,814	114,254	3.03
Malta	29,614	402	1.36
Portugal	827,494	16,916	2.04
Slovenia	226,499	4,408	1.95
Spain	3,347,512	76,328	2.28

Note: Data collection April 12 2021. Source: European Centre for Disease Prevention and Control, 2021.

The comparison among Mediterranean countries shows sometimes similar values of lethality rates, even if the general survival and health status of southern shore is generally worse. The low crude rates depend on the age structure, much younger to Eastern and Southern Mediterranean countries with respect to Europe. Consequently, the older age structure in Europe leads death rates to higher values, even if the general survival is higher, comparing the worse situation of pandemic disease in East-South Mediterranean Basin, immediately visible in Egypt and Syria.

3. Social and economic characteristics of the two Mediterranean shores

Let's go to present the macro differences in the social and economic situation of the two shores, starting with Human Development Index (HDI, tables 3 and 4) and infant mortality rate (IMR) from one side, and poverty and income from the other.

This index supplies a picture of the European countries (table 3) and of the southern-eastern Mediterranean countries (table 4) and outlines the difference between the two shores, starting with HDI, an indicator that includes mortality, education and income.

All countries belonging to southern-eastern, apart Israel, are in the lower part of ranking of HDI, and the piece of puzzle outlined by this index goes together with the other economic indices that we are now going to describe, and together with the picture depicted by the COVID numbers.

Table 3 – *HDI Index for northern Mediterranean countries.*

Rank: in the region	in the world	Country	HDI 2019	HDI 2018
14	22	Slovenia	0.917	0.902
6	25	Spain	0.904	0.893
17	26	France	0.901	0.891
19	28	Malta	0.895	0.885
20	29	Italy	0.892	0.883
22	32	Greece	0.888	0.872
23	33	Cyprus	0.887	0.873
28	38	Portugal	0.864	0.850
31	43	Croazia	0.851	0.837

Source: Wikipedia, 2021a.

Table 4 – *HDI index for southern and eastern Mediterranean countries*.

Country	2019	Category
Israel	0.888	Very high
Turkey	0.820	Very high
Algeria	0.746	High
Lebanon	0.744	High
Jordan	0.729	High
Libya	0.724	High
OPT	0.708	High
Egypt	0.707	High
Tunisia	0.698	High
Morocco	0.686	Medium
Syria	0.567	Medium

Source: Wikipedia, 2021b
Note: The top 3 countries are Netherland, Ireland and Germany; the last countries in the ranking are Latvia, Romania and Bulgaria.

The mean value of infant mortality rate in Southern Europe is very low (IMR range from 1.7 in Slovenia to 6.6 in Malta) while in the North Africa and Western Asia is higher (from 22.6 per 1,000 in Iraq to 6.6 per 1,000 in Lebanon) (Euro-Peristat, 2018; GBD, 2018). The Eastern Mediterranean region accounts for almost 15% of the total global burden of newborn and child mortality, most of which is concentrated in a few countries. Despite falls in mortality from 1970 to 1990, rates in these countries have recently increased (such as in Iraq) or stagnated. Accurate data for child health indicators in the Gaza Strip are not available, and we do not yet know the full effect of the current humanitarian crisis in Lebanon on child health (Bhutta *et al.*, 2006; Unicef, 2020).

In this Region, some countries still struggle to control infectious diseases, while others face a greater threat from chronic, lifestyle-related diseases such as cardiovascular diseases, diabetes, respiratory diseases and cancers. The World Health Organization (WHO) continues to support countries to ensure functioning and accessible health care systems. Nearly two thirds of countries in the Region are directly or indirectly affected by crises. The magnitude of conflict, natural disasters and political instability – resulting in widespread human suffering – places unique challenges on countries in the region. Since early 2020, the region has also been affected by the ongoing coronavirus disease (COVID-19) outbreak. The outbreak is testing health care systems and affecting population health outcomes. It also demonstrates that enhancing health system preparedness is not only an issue for

emergency-prone countries; it is a necessity for all countries, even those with well-established and strong health care systems.

Inequalities in the region of Mediterranean Basin may be measured by Gini Index and share of poverty. Table 5 reports Gini index for all countries examined. Inequalities in income is larger in Turkey, in Tunisia and in Morocco, while the other countries assume lower similar values. The greater values of the Gini index, the larger are inequalities in the countries.

Table 5 - *Gini indices of personal income distribution*.

	80-85	85-90	90-95	95-00	00-05	05-10	10-14
Portugal	34.9	32.7	34.9	38.4	38.8	35.9	34.4
Spain	33.7	32.7	34.7	34.9	33.6	32.5	34.2
France	31.6	31.8	32.1	31.5	31.1	28.7	30.2
Italy	29.1		27.9	32.5	32.7	31.8	32.5
Malta					27.0	27.5	27.5
Slovenia		22.6	23.4	26.3	25.4	23.4	24.2
Croatia		35.8	34.8	32.1	31.0	31.6	30.8
Bosnia				33.1	34.1	35.2	35.7
Serbia				32.2	33.0	29.8	29.7
Montenegro				30.1	29.9	31.1	
Macedonia				31.0	38.6	39.9	37
Albania				27	32.5	30	29
Greece	39.2	37.1	35.8	34.6	33.1	33.6	34.2
Turkey		43.5	41.3	41.6	41.6	40	40
Cyprus		34.0	30.0	29.8	31.0	29.4	31.9
Israel	32.6	32.9	33.4	34.3	36.3	37.1	36
Jordan	38.4	38.4	40.0	38.6	37.3	36.0	
Egypt	35.1	33.0	34.1	36.0	32.6	32.5	
Tunisia	35.9	33.9	36.6	48.0	43.0	39.8	
Algeria		37.9	35.6	35.6	35.9	35.6	
Morocco	39.2	39.2	39.2	39.6	45.0	47.0	

Sources: WYD EU SILC- 2008-2014; LIS-SILC-Eurostat 2010-2014; LIS-SILC Income; OECD-Eurostat; Eurostat; WIID-Eurostat; ECA–Eurostat 2005-2014; WID, Ortiz and Cummins; World Bank; POVCAL; WIID; Eurostat 2003-12; OECD; WYD –Eurostat from 2003; WYD-POVCAL; POVCAL-WYD gross income; POVCAL-WYD.

Note: averages of available data for five years. Sources: INDIE, LIS, SILC, WYD and WIID surveys are the primary sources of data used by B. Milanovic, All the Ginis Dataset, World Bank Research Department, version June 2013, http://go.worldbank.org/9VCQW66LA0; Ortiz and Cummins (2011); OECD, Income distribution and poverty dataset, online, OECD.Stat. Eurostat, Gini index of equivalised disposable income, online dataset. World Bank, World Development Indicators (WDI) 2015 online database. Source: Trends in Mediterranean Inequalities 1950-2015 Daniele and Malanima, MPRA, in https://mpra.ub.uni-muenchen.de/78324/1/MPRA_paper_78324.pdf.

Historical data on income accruing to the top 10 percent for three Mediterranean countries such as France, Spain and Italy, suggests diverse trends. While in Italy inequality in income rose from 1984, it was diminishing in France from 1964 and was almost stable in Spain. European countries show generally similar values with Gini index around 30%, while Asian and African indices are a little higher but differences are weak.

And poverty? A comprehensive investigation of patterns of social protection in southern Europe is outside the scope of our analysis. It is sufficient to stress here that southern European countries share many characteristics in terms of historical development, socio-economic trends, value systems, institutional structures and welfare arrangements: they more or less lag behind in welfare state development, and their most salient socio-economic and political structural characteristics largely contrast them with north-western European countries.

Table 6 - *Poverty, main indicators, 2003 and 2013*.

	Poverty headcount ratio (%)						Income quintile	
	Urban		Rural		Total		Share ratio	
	2003-2013		2003-2013		2003-2013		2003-2013	
EU-28								5.0
Egypt	10.1	17.6	26.8	32.4	19.6	26.3	3.9	4.8
Israel	19.1	18.8	16.5	13.7	20.6	18.6	3.4	7.1
Jordan	12.9		19.2		14.2	14.4	6.6	
Lebanon							28.5	
Libya					12.6		2.3	
Morocco	7.9		22.0		14.2		7.4	
Palestine	32.0	26.1	38.5	19.4	35.5	25.8	6.1	6.4
Syria	8.7		14.2		11.4		5.7	
Tunisia	15.4	9.0	31.5	22.6	23.3	15.5		

Source: https://now.allthatstats.com/articles/income-quintile-share-ratio-54

Table 7 – *Poverty (see note 1) in the southern European countries, 2018*.

	Poverty		Poverty
Albania	14.3	North Macedonia	21.6
Cyprus	14.7	Malta	17.1
Spain	20.7	Montenegro	24.5
France	13.6	Portugal	17.2
Greece	17.9	Serbia	23.0
Croatia	18.3	Slovenia	12.0
Italy	20.1		

Source: World Bank. 2020.

If southern Europe lag behind northern Europe, many Asiatic and African Mediterranean countries show stronger inequalities in income and poverty than Europe. The events taking place in several of South Mediterranean countries since December 2010 show that multiple deprivations may be powerful drivers of political instability. Though improvements of the living conditions have been regularly principal demands along with civil and political liberties in the demonstrations, one of the main striking facts about this so-called "Arab Spring" is that poverty had not been given the same emphasis in southern Mediterranean countries during the last decades as in other areas of the developing and emerging world.

We wonder if there is some type of association among COVID -19 ranking and these forms of economic and social indicators. The share of people under the threshold of poverty is reported in table 7. The poverty ratios presented are relative measures, showing the proportion of the population having insufficient resources to satisfy their minimum vital needs (food products and non-food products or staples). To take specific national characteristics into account, the calculation method varies from one country to the next and as a result caution should be applied when making comparisons. Jordan and Tunisia (both 2010 data) reported the lowest national poverty ratios among ENP-South countries, while the highest ratios were recorded in Palestine (2011 data) and Egypt; note that no recent data are available for several countries. Palestine reported a higher poverty rate in urban areas than in rural areas, whereas the reverse situation was observed in Egypt, Israel and Tunisia.

4. An overview

We want now to consider together all the factors that we have above described, taking into account the lethality rate by COVID 19, infant mortality, share of poverty[2], HDI and Gini Index. Some countries do not have available data relatively to all variables so we cannot include them in the correlation and cluster analysis (Method: K-means) that we performed to attempt to understand the association (tables 8 and 9).

[2] National poverty headcount ratio is the percentage of the population living below the national poverty line(s). National estimates are based on population-weighted subgroup estimates from household surveys. For economies for which the data are from EU-SILC, the reported year is the income reference year, which is the year before the survey year.

Table 8 – *Correlations among the variables used in the analysis.*

		Poverty	Gini	HDI	IMR	COVID
Poverty	PI*	1.000	0.060	-0.101	0.028	0.685**
Gini	PI*	0.060	1.000	-0.697**	0.623**	0.062
HDI	PI*	-0.101	-0.697**	1.000	-0.982**	-0.389
IMR	PI*	0.028	0.623**	-0.982**	1.000	0.315
COVID°	PI*	0.685**	0.062	-0.389	0.315	1.000

**Pearson Index; **Correlation is significant at level 0.01 (one tail).°lethality rate*

Source: Our elaboration on the above cited source of data.

The correlation between variable is negative and high for HDI-IMR, Gini coefficient, -HDI and COVID-19. The correlation instead is positive and high for poverty-COVID, Gini coefficient-IMR and finally for COVID-IMR. COVID presents therefore positive correlation with variable which denotes unease and social inequality. The variables distinguish perfectly the two shores.

Table 9 – *Final centres of the clusters.*

	Cluster 1	Cluster 2
Poverty	16.800	17.600
Gini	31.000	38.800
HDI	0.880	0.656
IMR	3.000	13.000
COVID lethality rate	1.900	3.080

Source: Our elaboration on data coming from the sources indicated in the previous tables.
Note: In cluster 1 are included Albania, Croatia, Cyprus, France, Greece, Israel, Italy, Malta, Portugal, Slovenia and Spain. In cluster 2 Egypt, Jordan, Morocco and Tunisia.

Putting together in the cluster analysis the variables rate of lethality due to COVID; infant mortality rate (IMR), poverty and Gini coefficient we obtain two distinct clusters, one for northern shore, the other for the southern-eastern one, the first characterized by high values of the variables that imply more developed contexts, the second by values of the variables that imply less favourable situations.

5. Conclusions

The COVID 19 pandemic is a major world phenomenon. Its economic impact is just beginning to unfold, but we already know that its size will be huge, of an unprecedented order of magnitude. It already has impacted many aspects of human

and social behaviour and will continue to do so. People most at risk are the poor, the marginalized and the socially excluded whose basic components of their livelihood are under threat: their health and their income.

While data on European countries are rich and detailed, often in the southern-eastern Mediterranean countries are not. For example, sex-disaggregated data on COVID-19 incidence and mortality, respectively, have been reported in only 15 and 10 out of the 22 Arab countries. The significance of COVID-19-related gender disparities has been recognised worldwide and carries far-reaching implications in the Arab context, which has the world's lowest female labour force participation rates. Additionally, gendered caregiving responsibilities, which include caring for ill relatives, may place Arab women at greater risk of contracting the virus. Sex-disaggregated data are thus vital for developing prompt and contextualised responses. Moreover, age-stratified COVID-19 mortality estimates are reported in only 10 Arab countries. Consequently, we cannot analyse disaggregated data to make a comparison between the two different shores. This represent the first critical point for our study that is consequently only partial.

In our review, to the aim to outline groups of countries according Covid data and health and income characteristics, we have performed our overview analysis only for 15 countries because the others lack the needed data. This represents the second critical point for our research. But the picture is clear: European, Asiatic and African Mediterranean countries are very different according to these variables: they are divided according to economic and health factors very clearly, and North Mediterranean countries are less disadvantaged from the various points of view we have examined, with the pandemic associated with worse living conditions. We are not able to outline a cause-effect link between COVID and factors, but there is certainly a real association.

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SUMMARY

Mediterranean basin in the COVID-19 crisis

The Institute for Health Metrics and Evaluation noted a threefold increase in the number of deaths in the region between September and December 2020, with COVID-19 projected to become the fourth leading cause of death by early 2021. Yet significant discrepancies in both indicators and quality of data reported across the MENA region limit our understanding of the scope and the implications of the pandemic in the Arab context.

The aim of our research is to understand if there is some association between COVID and health and economic situation in the countries of Mediterranean Basin. We have firstly described some economic and health factors (IMR, Gini index for evaluate inequalities, and share of poverty in the two shores of Mediterranean Sea. Then through the cluster analysis we have obtained an overview of the countries outlining two cluster that override precisely the two regions, the European one and the Asian-African one. The greatest inequalities, the highest infant mortality, the largest share of people below the poverty line are associated with the higher prevalence of Covid. It should be noted that in the countries of south-eastern shore the data are not excellent and therefore caution is required in the interpretation of the results.

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