Is Spain doing well or badly in its response to COVID-19?

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Comparisons are odious, as the saying goes, and yet we all like making them. In fact, we like them so much that drawing comparisons has become a way of gaining visibility in the media and social networks, a way of claiming a place in the world and even, sometimes, a way of making a living. When comparisons are systematic and quantified and seek to encompass all countries (or all the companies in a sector, or all the universities in the world, or any other comparable subject) they are known as rankings or indices and innumerable examples of them have been produced in recent years. One of the most recent is the **GRID Index** (Global Response to Infectious Diseases, GRID™), drawn up in Australia, which seeks to compare the quality of countries' responses to COVID-19. Spain is ranked last by this index, a fact that has been widely reported in the Spanish media, whether as ammunition in the internal political debate or to show once again how willing we Spaniards are to talk badly about our own country. Following its initial success in the media, the index has lost credibility die to its inconsistencies.

But is there any basis to this comparison in which Spain emerges so badly? In order to evaluate the quality of countries' responses to any problem it is first necessary to fully ascertain the nature of the problem. Secondly, there is a need for a yardstick; in other words, one must know what are the appropriate measures required for resolving it. And, thirdly, one must have truthful, complete and homogeneous information regarding the basic data (the numbers of those affected by the problem, the impact of the measures that have been taken). As will become evident below, none of these three requirements is fulfilled in the case of **COVID-19**.

It is true that according to the data published by the countries themselves, Spain and Belgium are ahead in terms of deaths *per capita* caused by COVID-19. Thus, according to the data available at the time writing (29 April 2020), 647 people per million have died from the pandemic in Belgium, while the figure for Spain is 510. These are followed by Italy (453) and France (362). All western European countries are in

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the upper part of the list, with a mortality rate higher than the world average, currently standing at 28 deaths per million people. China, despite being the origin of the pandemic, only accounts for 4,633 deaths, or three per million, significantly below the average.

The first problem with the data is that there is no consistency in the way they are collected: some countries assume that the deaths of all elderly people during the pandemic, whether in their own homes or at care homes, are attributable to COVID-19, whereas others do the opposite, assuming that old people died due to their previous

state of health, and to add even further confusion some countries have counted such deaths among the elderly first in one way and then in another. To add to the opacity, most countries do not have data based on autopsies: these have been avoided in order to prevent the risk of infection, so the exact causes of such people's deaths are frequently unknown. Did all those who died from pneumonia do so because they contracted the virus causing COVID-19? No-one knows. It is even possible that they were infected but died from another cause. This is why, amid the lack of autopsies and clear diagnoses, epidemiologists commonly use the concept of excess mortality rate for any given period; in other words, the comparison between how many people in each age group normally died in each month prior to the pandemic and how many die in each month during the pandemic.

But the lack of homogeneity in counting methods affects not only deaths but, to an even greater extent, the number of infections. Health services all over the world, overwhelmed by the need to care for patients with symptoms, lack both sufficient capacity and the measuring tools needed to ascertain the extent of the infection. In this context, some countries have been much more capable than others in deploying the resources needed to identify and quantify infections (Germany is a good example), possibly because their health services have not been so overwhelmed by the healthcare needs of patients, but even in these countries the exact number of infections is unknown.

This leads on to another question: how many of those infected go on to develop the illness with symptoms and how many of them then require hospital care, ICUs, ventilators and so on? In order to measure the quality and efficacy of countries' responses it would be imperative to know the answer to this question, but no such answer exists, only conjectures. The most widely quoted conjecture is that 80% of infected people lack any symptoms, 17% develop symptoms that are either mild or treatable with the current treatments, and 3% die (the WHO calculates 3.4%). Again, without knowing the number of infected cases, these percentages are only estimates based on flimsy foundations.

Given that the virus is passed from person to person, clearly there are certain conditions that make it more easily transmissible: population density and forms of socialisation are the most obvious. This could go some way to explaining the low incidence of the disease in countries with very low population densities and, within countries, its concentration in metropolitan areas (London, Milan, Barcelona, Madrid and New York), and even, within cities, in more densely populated districts. The latter factor, overcrowding in certain districts, is related to immigration and in general to low incomes. In Singapore, for instance, which was thought to have controlled the spread of the pandemic, the infection has made a significant reappearance in densely-populated districts inhabited by immigrants. In Madrid, COVID-19 mortality rates vary considerably depending on districts, and these differences broadly correlate to income levels and the population density of immigrants.

With regard to forms of socialisation, there are countries where interpersonal distancing in excess of 1.5 metres is observed as a matter of course (getting closer to one another is deemed intrusive), while others, such as Spain, tend towards physical proximity and greetings involving contact between hands, faces and bodies.

From this perspective, any health policy that imposes social distancing will be more effective over the short term than one that permits physical contact. But as medical authorities all over the world have explained, such isolation is only a temporary measure to prevent the build-up of cases from overwhelming the response capacity of the health services. Social isolation measures cannot prevent infections from continuing to take place when isolation comes to an end.

It is widely acknowledged that the age structure of societies is one of the most determining factors in the mortality caused by this pandemic: COVID-19 has a disproportionately serious effect on the elderly, so if two countries of the same size are compared, everything else being equal, the one that has the more elderly population will suffer more deaths on this account. Not all viruses are like that (the so-called 'Spanish flu' predominantly killed young adults), but in the case of SARS-CoV2 the relationship is well established. Spain, which has one of the most aged populations of any country in the world, is at a disadvantage in this respect. It has also been shown that women suffer the impact of the infection less than men. But the gender difference does not affect international comparisons, because virtually all countries have the same sex ratio.

What this means is that, all other things being equal, the countries most affected by the pandemic ought to be the ones with the most elderly populations, are the most densely populated and have forms of socialisation involving greater physical proximity. However, the data do not back this up: Japan, the country with the most elderly population in the world, with high population density and moreover geographical proximity to China, is well below the average mortality ascribed to the pandemic: just three deaths per million. Does that mean that Japan has performed much better than France or Spain? It is possible that the habit of wearing masks as a means of protection against pollution, sunshine and infections throughout South-East Asia and the Far East has provided a highly significant degree of protection. And the use of mobile phones to trace the movement of infected people has undoubtedly proved to be effective in reducing the spread of the virus. But it is also possible that there are other factors at work.

Indeed, from a genetic standpoint there is the hypothesis that SARS-CoV2, the virus that causes COVID-19, could have different impacts on different parts of the population depending on the most common haplotypes, in other words, genetic variants. This would help to explain why the population of the Far East is suffering much lower mortality rates than Europe and why in the US the pandemic is disproportionately affecting the black population. It is also worth applying the hypothesis to Europe, where it would explain why countries with similar population pyramids and population densities nonetheless have very different mortality rates attributable to COVID-19. The whole of Eastern and South-Eastern Europe (Greece, for example) is suffering much less from the pandemic than Western Europe.

Also from the perspective of genetics, applied in this case to the virus itself and its mutations, hypotheses have been put forward suggesting that the variety of the virus that has reached Europe and the US is more harmful than the one affecting other parts of the world.

Another consideration that for the time being makes it impossible to ascertain which governments have been most effective is the different developmental phase that the pandemic has reached in the various countries. At the time of writing, African countries, for instance, have very low mortality rates attributable to the virus. Is this because the pandemic is only now starting to spread across the African continent? Is it because heat counteracts the virus (something that has not yet been corroborated)? Is it because, as some have suggested, Africa has more experience than other continents in responding to pandemics?

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The question of what phase of COVID-19 a country is in does not yet have a clear answer: responding to this question would require knowledge of what percentage of the population has been infected. At present, neither Spain nor most other countries know for certain what percentage of their populations have been infected (in theory, Spain will know by the end of June, when the study being carried out by the Carlos III Institute and the National Statistics Institute has been completed). It follows that a low number of deaths due to the pandemic at a given moment in a country could mean that it has taken appropriate measures or it could equally mean that the country is still in an initial phase of the spread of the pandemic.

Meanwhile, it is still not clear whether the illness does or does not bestow immunity on those who have recovered from it and this is a key aspect, because, if it does not, until a vaccine can be produced, indefinite isolation becomes the only guarantee of not becoming infected, something that is socially and economically unsustainable. Moreover, if the illness does not produce immunity, the development of a vaccine is much more difficult, because vaccines are based on the ability of the human body to immunise itself against the onslaught of the virus.

With this accumulation of unknown variables, it is impossible to ascertain the quality of the various steps that countries take. Governments are acting in the dark, basing their measures on indications stemming from lessons learnt in other countries, everyone is learning from everyone else in a steady accumulation of experiences, successes and failures. Fortunately, the very globalisation that has allowed the virus to spread from China to the rest of the world in a matter of weeks also enables the rapid transmission of lessons and international scientific cooperation in the search for a vaccine and antiviral treatments.

There is currently a torrent of new information relating to COVID-19, with data about the incidence of the illness being updated daily, thousands of scientists throughout the world conducting research and publishing extremely important findings about how the illness is transmitted, how the virus acts and mutates, and about the success of various medical treatments. Never before in the history of humanity has there been such a concerted intellectual effort aimed at solving a single problem. The consequence is that every day, literally every day, we know more. Meanwhile, those opportunistically making noise on the side-lines can be safely ignored.