Editorial

Evidence-Based Public Health and the Novel Coronavirus Disease (COVID-19) Pandemic: A Balance Between Science and Art?

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At the end of the last century, in 1997, Jenicek [1] defined evidence-based public health (EBPH) as the "… conscientious, explicit, and judicious use of current best evidence in making decisions about the care of communities and populations in the domain of health protection, disease prevention, health maintenance and improvement (health promotion)…". Since then, other definitions have also emerged [2, 3].

This concept is related to the concept of evidence-based medicine (EBM). EBM has already had a great impact on the practice of medicine, i.e., science-based clinical practice, and produces clearly better clinical outcomes.

EBPH needs, in most cases, a multidisciplinary approach using information and knowledge from different scientific areas. This knowledge supports public health decision-making procedures that should always be based on the scientific evidence and available resources.

There is no doubt that the novel coronavirus disease (COVID-19) pandemic is a major public health crisis that has brought with it great challenges concerning global health; it has mobilized a lot of scientific areas aiming at improving risk assessment and, consequently, risk management. The collaboration between industry and several sciences, including medicine (clinical and public health practices) and other health sciences, made it possible, for example, to conduct risk assessment, introduce risk management, and develop diagnostic tests and vaccines in a very short period of time.

SARS-CoV-2 infection is highly contagious, mainly via the respiratory route like other known respiratory viruses. The virus has spread all over the world and from 31 December 2019 until week 11 of 2021, a total of 123,636,852 cases of COVID-19 have been reported (according to the applied case definitions and testing strategies in the affected countries), associated with 2,721,891 deaths [4]. Currently, the reinfection rate seems more controlled in Europe, with asymmetries between countries, but further research will determine, unquestionably, improved evidence-based decisions [5].

One of the most difficult challenges felt during this pandemic concerns the urgency of risk management. Risk management is being based on the scientific knowledge that is emerging daily, with studies sometimes being contradictory. Public health resources are also scarce, as we were not prepared for such a calamity. As a result, there is not always a solid evidence base.

The global response to the COVID-19 pandemic has been exceptional, with unpreceded cooperation by differ-

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ent sectors of society. However, there is also great inequality regarding the scale and prompt delivery of health care. Therefore, a lot of work remains incomplete, and, so far, we do not have enough scientific knowledge for a fully EBPH approach to deal with the constant challenges of risk management.

Accordingly, countries and populations have rallied to fight the pandemic, often trying to provide an answer that appears to be a product of the balance between science and art. As a matter of fact, research and action have progressed almost to a point of "holding hands," something never before observed.

Risk management and public health strategies are influenced by important social, economic, and politic consequences. As highlighted by Brownson et al. [6] "… key components of EBPH include making decisions on the basis of the best available scientific evidence, using data and information systems systematically, applying program-planning frameworks, engaging the community in decision-making, conducting sound evaluation, and disseminating what is learned…".

The exponential growth phases of the COVID-19 pandemic have been complex, and call for a continuous, multifaceted, and rapidly adjusting public health response which is not always evidence-based. Such a response should have more precise risk assessment, better expansion of institutional partnerships, international cooperation, and a huge investment in risk communication.

The COVID-19 pandemic changed our health care systems in a unique way due to prioritizing the management of the pandemic and limiting the spread of the SARS-CoV-2 virus. This is in addition to the impact that the pandemic has had on our lifestyles [7], and preparing for new waves of the pandemic which has mobilized our current efforts.

One of the lessons to be learned all over the world from this pandemic is that, in the event of such a public health emergency, the weaknesses of our health care systems are exposed and are unprepared to cope with such a burden. Emergencies like the COVID-19 pandemic need global responses that are based on public health approaches (or preferably, on preventing disease and promoting health), which are, unfortunately, not the focus of most health care systems.

The *Portuguese Journal of Public Health* has engaged all its efforts to study and research COVID-19, with the aim of producing more scientific evidence for the development of public health strategies to fight the spread of SARS-CoV-2 disease.

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