

Rapid Response:

CoViD-19, a "syndemic" rather than a "pandemic" disease

Dear Editor,

The term "syndemics", another word derived from the ancient Greek language, was introduced for the first time during the '90s in the biomedical language by Dr Merrill Singer, an American medical anthropologist, who several years later signed, along with others, a popular editorial on this topic (1).

Indeed, the expression "syndemics" applies to a number of preexisting or concurrent disease conditions - with special emphasis on chronic, "non-communicable illnesses" like cardio-circulatory, hypertensive and neoplastic disorders - as well as to a variety of "socio-economic" (demographic density and distribution, educational, poverty and hygiene levels, social promiscuity, etc.) and "climatological-environmental" (climate change, global warming, desertification, deforestation, use of land for agricultural purposes, etc.) parameters, which should be taken into adequate account when analyzing and evaluating the data, numbers and trends of any infectious disease condition. This is particularly true when dealing with "globally distributed" infections, as in the case of the "SARS-CoV-2/CoViD-19 pandemic", the numbers of which have now exceeded 70 million cases, with over 1,600,000 deaths worldwide.

In this respect, and just to make some examples aimed at providing a "clear-cut perception" of the CoViD-19-associated/related "syndemic dimension", we could mention the many and serious hurdles frequently met by patients affected by preexisting illnesses, such as cardiovascular and tumour disease conditions, in getting proper access to health care and assistance as well as to their respective therapeutic regimens. Beside ranking among the most common causes of death in the Western world, cardiovascular and neoplastic disorders show a much higher prevalence in older people, who also represent the population segment more commonly affected by the most severe CoViD-19 clinico-pathological disease phenotypes. And, as it is also well known, cardiopathic, hypertensive and neoplastic patients, with special reference to male subjects, are more prone to develop particularly impacting CoViD-19 forms, with the heaviest death toll regarding just these individuals (2).

Said in other words, these patients appear to be the victims of a "paradox", provided their preexisting disease conditions, which render them more "fragile" towards the most severe clinico-pathological forms of CoViD-19, will not benefit in many cases from a level of health care and assistance comparable to the one the same individuals received in the "pre-CoViD-19 era"!

As far as the aforementioned "socio-economic" and "climatological-environmental" variables are specifically concerned, clusters of severe SARS-CoV-2 infection cases have been reported in territorial contexts characterized by a high population density and by low economic income and educational level, as well as by social promiscuity and/or lack of hygiene and respect of viral spread mitigation measures.

Furthermore, the progressive increase in the average temperatures recorded on Earth throughout the last 140 years (with special emphasis on those from 2014 to 2020), accompanied by enhanced desertification and deforestation - the latter originating also from the dramatic fires occurred in many geographical areas of the Planet in the recent past - together with the alarming land loss due to intensive agriculture, would act synergistically in multiplying the chances of mutual interaction(s) between us and domestic animals, on one side, and wild animal species, on the other.

As in the well-documented cases of bats and rodents, wild animals may serve, in fact, as "reservoirs" for a large number of infectious pathogens, thereby making possible - under the influence of the conditions cited above - the "spillover" of these agents from "wildlife" to humans. We should firmly keep in mind, within such context, that no less than 70% of the pathogens - both viral and non-viral - responsible for the so-called "emerging infectious diseases" have either a documented or suspect origin from a "primary" wild animal host (3). This seems to apply also to SARS-CoV-2 as well as, with certainty, to its two "betacoronavirus predecessors", namely SARS-CoV and MERS-CoV.

Based upon the above, an "holistic" approach efficiently summarized by the "One Health" concept, reciprocally and tightly linking human, animal and environmental health, would represent the "winning solution and formula" to be adopted in order to adequately tackle and foresee - with the strategic aid of "artificial intelligence, most hopefully - all the future epidemics and pandemics.

As a consequence, this would also render the use of the term and adjective "syndemic" more appropriate than "pandemic" when dealing with similar global emergencies.

References

- 1) Singer M., et al. (2017) - The Lancet.
- 2) Albin A., et al. (2020) - Internal and Emergency Medicine.
- 3) Casalone C., Di Guardo G. (2020) - Science.

Competing interests: No competing interests

14 December 2020

Giovanni Di Guardo

Professor of General Pathology and Veterinary Pathophysiology

University of Teramo, Faculty of Veterinary Medicine

Località Piano d'Accio, 64100 Teramo, Italy