

PLANET HEALTH AND MENTAL HEALTH: THE LESSON WE SHOULD LEARN FROM COVID-19 PANDEMIC

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We cannot solve problems with the same thinking we used when we created them. Funny thing about creativity and innovation, it doesn't usually happen unless you change the way you've been working
 Albert Einstein

The current Covid-19 pandemic is a sharp cue of how dramatic can be the worldwide consequences of human activities leading to climate change and pollution irrespective of our ecosystem. The related naturally-occurring, catastrophic events may weaken the ecosystem that is clearly becoming more and more fragile and vulnerable and may increase the probability of spillover of wild viruses from animals to us (Ostfeld, 2009; Gibb et al., 2020). Indeed, climate change, air pollution, and virus-triggered outbreaks such as the current COVID-19 pandemic appear to be interconnected, and they all possibly increase the risk not only of physical, but also of mental disorders (Lindahl and Grace, 2015; Costa et al., 2020).

Although it is not always easy to establish specific cause-effect relationships, it is a common notion that meteorological changes and air pollution can induce psychopathological phenomena, generally labelled as meteoropathy, a term currently used to define any symptoms related to weather conditions (Balsamo et al., 1992). In any case, meteoropathy is considered to be the results of the interactions between two complex systems: the environment, in a broad sense with everything (both biotic and abiotic elements) populating it, and human beings (Cianconi et al., 2020). Interestingly, an increasing bulk of data supports the existence of psychological and psychiatric sequelae of COVID-19 pandemic, ranging from mild negative emotional responses to full-blown psychiatric conditions, specifically, anxiety and depression, stress- and trauma-related disorders, and substance abuse (Marazziti, 2020a, 2020b; Marazziti and Stahl, 2020; Marazziti et al., 2021). Data also exist that these conditions might be triggered and/or worsened by the intertwining with the

brain effects due to climate change and pollution (Costa et al., 2020a, 2020b).

In this respect, it is noteworthy that the World Psychiatric Association (WPA) accepted to create a novel section, called *Ecological Psychiatry/Neuropsychiatry or Ecopsychiatry/Econeuropsychiatry*, that is the application of ecological thought to the study and practice of neuropsychiatry (Krasnov, 2002; Moffic, 2013; Chowdhury, 2016), while taken into consideration the increasingly dramatic challenges following global ecological disasters and related emergencies. The assumptions are that natural and man-made emergencies are often coupled, and they may represent unspecific traumatic stressors often impairing wellbeing and physical and/or mental health (Lundberg, 1998).

If it is now evident that psychopathological disorders are the results of the association of individual vulnerability coupled with environmental factors, it is also true that different emergencies may provoke distinct biological adaptive responses and abnormalities leading to characteristic neuropsychiatric effects (Loganovsky et al., 2019). Not surprisingly, it is hypothesized that COVID-19 pandemic might increase the rate of schizophrenia (Loganovsky and Loganoskaia, 2021), as already had occurred following other viral pandemics, such as the 1918 influenza, given the increasing case reports of schizophreniform disorder or acute psychotic disorder in the last year (Smith et al., 2020; DeLisi, 2021; Oloniniyi et al., 2021).

In our opinion, psychological and psychiatric consequences of the COVID-19 pandemic are strong cues of our indifference about the links between our behaviors, our health, and the health of our planet, as shown by the increase of natural extreme events worldwide. It seems that we neglect the patented possibility that a sudden emergence of stochastic effects might lead to irreversible catastrophes (Marazziti et al., 2021). Therefore, it is essential that we move towards a deeper understanding of these relation-

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ships, not only for our short-term survival, but also for the maintenance of that balance amongst all living and non living elements and the environment that is at the basis of the life on Earth and of its future. This is just the beginning of the story that requires the emergence of a brand new and real ecological awareness that should lead to a total and quick (re)shaping of policy and human way of living, if it is true that “every catastrophe has its own origin” (Neyrat, 2008).

The promotion of ecological awareness worldwide will require appropriate countermeasures to decrease, if not to revert, climate change, air pollution, and the intensive and destructive human activities that increase the eventual spillover of viruses, such as the SARS-COV2, from animals to humans. Public behavioral change is also needed in response to climate change and pollution through a correct information and effective “green” policy, that should not be limited to bombastic statements, but should rely on concrete deeds (Marazziti et al., 2021). As Wiebers & Feigin (2020) state in their target article, “Rather than simply attempting to react to crises like COVID-19 after death and destruction are already upon us, we need to address the fundamental underlying causes and act now to prevent the numerous disasters that are literally waiting to happen”.

This process implies a deep change of paradigms based on constructive and real integration of both human science and neuroscientific data leading to individual and political choices requiring novel visions, courage, commitment, great hopes for the future and cooperation. We must exercise our empathy, altruism and innate moral skills, essential for our survival and development (Marazziti, 2020; Porges, 2020), not only towards other members of our own species, but towards our planet and next generations.

We should always be aware that only a healthy planet might cooperate to create and support mentally healthy individuals that results amongst the most fragile ones under these circumstances (Costa et al., 2020b; Marazziti, 2020a; Marazziti et al., 2020; Loganovsky et al., 2021). Therefore, we recommend that specialists in psychiatry should be well trained in ecological psychiatry, given the increasing and worrying occurrence of dramatic disasters worldwide requiring novel and focused skills.

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