

# Commentary Paper: COVID-19 Pandemic and the Importance of Cognitive Rehabilitation



Shahram Zarrabian<sup>1</sup>, Peyman Hassani-Abharian<sup>2\*</sup>

1. Cognitive and Neuroscience Research Center (CNRC), Tehran Medical Sciences Branch, Islamic Azad University, Tehran, Iran.

2. Institute for Cognitive Science Studies, Brain and Cognition Clinic, Tehran, Iran.



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Since its outbreak in December 2019 in Wuhan, China, COVID-19 reached a pandemic state in less than 6 months and is still on the rise (World Health Organization, 2020). Considering the high transmissibility of COVID-19 (Wilder-Smith, Chiew, & Lee, 2020), global health and social actions should be taken to stop or reduce human-to-human transmission of the virus. As community transmission is one of the important transmission levels (World Health Organization, 2020), the methods of human beings' judgment should be considered if we want to tackle the disease effectively.

The topic of COVID-19 arises almost every time one surfs the Internet and different social media sites, watches TV, listens to the radio, or even has a friendly conversation. A closer look at the current situation reveals that two pandemics should be considered regarding COVID-19. One is the pandemic of the disease itself and the other one is the pandemic of COVID-19 fear, which is caused by a fearful response to unknown conditions (Ren, Gao, & Chen, 2020). The positive side of the situation that should be taken into account is that although COVID-19 is a new virus, its fear is not (Ren, Gao, & Chen, 2020). A review of the literature published on AIDS (acquired immunodeficiency syndrome), SARS (severe acute respiratory syndrome), MERS (Middle East respiratory syndrome), and EVD (Ebola virus disease) can help us to deal with the current situation (Christensen, Dube, Haushofer, Siddiqi, & Voors, 2018; World Health Organization, 2012).

Eustress can be useful and protects individuals by following the health officials' advice and sticking to self-care guidelines. However, the thought of dying of COVID-19 is an internal stressor (Liu & Doan, 2020) and, like other stressors, causes cognitive impairments in different domains namely attention (Dutra, Marx, McGlinchey, DeGutis, & Esterman, 2018), learning and memory (Schwabe, Joels, Roozendaal, Wolf, & Oitzl, 2012), and executive domains such as decision-making (Starcke & Brand, 2012) and problem-solving (Cheng & Lam, 1997).

Because cardiovascular diseases and cancers are still the main causes of death (World Health Organization, 2020), why there is a global fear of coronavirus. We answer this question using cognitive biases. A cognitive bias is a systematic error in judgment and decision-making, which might happen as a result of cognitive limitations, motivational factors, and or adaptations to natural environments (Mata, 2012). It should be kept in mind that in addition to those who are at risk of experiencing a severe case of the disease-older people and those with pre-existing medical conditions such as chronic respiratory disease, cardiovascular disease, and diabetes-other people also experience fear of COVID-19 (Menotti, Puddu, Maiani, & Catasta, 2016). The most related biases to the fear of COVID-19 include fortune-telling, catastrophizing, fundamental attribution error, disqualifying positives, negative filter, overgeneralizing, dichotomous thinking, should statements, personalization, blaming, unfair com-

\* Corresponding Author:

Peyman Hassani-Abharian, MD, PhD.

Address: Institute for Cognitive Science Studies, Brain and Cognition Clinic, Tehran, Iran.

Tel: +98 (21) 44072945

E-mail: abharian1972@yahoo.com; abharian@iricss.org

parisons, regret orientation, what if statements, emotional reasoning, ignoring counter-evidence, and judgment focus (Ahorsu, Lin, Imani, Saffari, Griffiths, & Pakpour, 2020; Beck, Emery, & Greenberg, 2005; Cook, Meyer, & Knowles, 2019; Kuru, Safak, Özdemir, Tulacı, Özadel, Özkula, & Örsel, 2018; “List of cognitive biases”, 2020; Mann & Beech, 2003; Mizes, Landolf-Fritsche, & Grossman-McKee, 1987). On the other hand, several cognitive biases can relegate self-care practices. These biases include optimism bias, ostrich effect, normalcy bias, apocalyptic beliefs, just-world hypothesis, accepting the victim role, and escaping responsibilities (Ahorsu et al., 2020; Beck et al., 2005; Cook et al., 2019; Kuru et al., 2018; “List of cognitive biases”, 2020; Mann & Beech, 2003; Mizes et al., 1987).

Behavioral restraints such as quarantine and loss of contact with family members and friends impose different levels of isolation on people and cause stress. The effects of different stressors on cognitive performances have been well-established in different cognitive domains such as risk perception (Renn, 1997), working memory, attention (Vander Haegen & Luminet, 2015), decision making, problem solving (Ostell, 1991), and emotion control (Lok & Bishop, 1999).

Hence, we propose simple steps to ameliorate the above-mentioned cognitive biases and contain the spread of irrational fear. The first step is to develop a critical mindset to spot fake news and hoaxes. Considering the source, content, time of publication and publisher of the news yields useful information. Besides, it should be kept in mind that fake news targets your emotions (Guo, Cao, Zhang, Shu, & Liu, 2019). Breaking the cycle of fake news is an effective step to lessen the spread of fear. To be informed of the essential information that helps with self-care, people should dedicate a fair amount of time to update themselves reading information published by the authoritative sources. Also, people should refrain from surfing the Internet and different social media, which increases their stress level. The second step is to make a positive intervention approach within their control and accept those out of it to reduce the stress (Folkman, 1984).

Besides other interventions such as cognitive behavioral therapy, Cognitive Rehabilitation Therapy (CRT) might be considered as a useful intervention because of the importance of cognitive deficits in cognitive distortions. CRT attempts to enhance functioning and independence (Sale & Gentile, 2018). Using different interventions, CRT aims to decline brain functional impairments or to lessen the disabling impact of those impairments (Shoulson, Wilhelm, & Koehler, 2012). CRT has been

proven as an effective way to reduce cognitive biases and increase an individual’s capacity for processing and interpretation of information (Antoni et al., 2001; Carrico et al., 2005). We believe that among diverse stress management methods, cognitive-behavioral stress management interventions are valuable choices to be considered.

Fortunately, cognitive functions can also be improved in healthy individuals and this includes the large population that might be at risk of COVID-19. Cognitive enhancement is frequently associated with the use of methods, devices, or drugs to improve cognition, and our experience gained from laboratory animals or through a history of use in humans has had great affluence in its development (Dubljević, Venero, & Knafo, 2015; Eack, Mesholam-Gately, Greenwald, Hogarty, & Keshavan, 2013). Recent studies have also reported on the beneficial application of computer-based brain exercises and cognitive games (Bozoki, Radovanovic, Winn, Heeter, & Anthony, 2013).

Successful survival requires proper interaction with the environment. As briefly mentioned here, cognitive rehabilitation and cognitive enhancement methods have enough flexibility to meet the needs of a diverse population.

## Ethical Considerations

### Compliance with ethical guidelines

This paper is a commentary letter and we didn’t have any human or animal participant. Furthermore, all statement, which are pointed within the above manuscript, are referred to their related references.

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### Authors' contributions

Both authors contributed equally in preparing all parts of the research.

### Conflict of interest

The authors declared no conflict of interest.

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