

# COVID-19-Stress Increases Risk of Addiction Development and Relapse

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## Abstract

COVID-19 nowadays has a devastating effect on almost every aspect of human life. Alongside the COVID-19 pandemic, other maladaptive behaviors develop and affect human life, such as substance abuse. Stress will cause adverse effects both behaviorally and immunologically. These adverse effects will make individuals susceptible to addiction development. Social isolation makes the present situation worse.

**Keywords:** COVID-19; Addiction; Relapse; Stress and Immune system

## Introduction

Abusing drugs is sometimes considered as the palliative strategy for the reduction of stress. Stress is a well-known risk factor for the development of addiction. Several animal and human studies have been well documented that stress increases maladaptive behavior [1]. Several studies strongly suggest cognitive function will be greatly impressed by stress [2]. Cognitive dysfunction may predispose individuals for example to develop conspiracy beliefs that will greatly increase the pre-existing stress [3]. In this sense, different factors affect individual beliefs and this makes the scenario more complicated. Social isolation would be a common policy to withdraw the individual from a complicated society [4].

This behavior will be more developed when considering that although COVID-19 infection in some patients is mild however in other people may express as a dangerous disease with symptoms resembling Severe Acute Respiratory Syndrome [SARS] and Middle East Respiratory Syndrome [MERS]. In severe cases, this disease is more than a common cold and manifest as heart, and respiratory failure, acute respiratory syndrome, or even death [5]. Besides cognitive reduction in a stress state, the immune system is also greatly influenced by stress. Recent studies suggest immune system dysfunction will impose on people the development of addiction and also exacerbation of pre-existing addiction [6]. Certain immune cells in the brain such as astrocytes and microglia cells will be activated in the brain and result in the alternation of the brain

environment. The alternation of the brain chemical environment especially in the sensitive brain region such as the prefrontal cortex will disturb decision-making that is very necessary for controlling drug addiction [7]. It is well known that orbit frontal cortex controls and potentiates some behaviors that individuals to better combat against unwanted situations. Also, another important fact is the dysregulation of the immune system by other infection will affect the normal brain function that would, in turn, causes emergence of maladaptive behavior such as depression by individuals that will make people susceptible to addiction [8].

On the other hand, the treatment of COVID-19 mandates some necessary rules. Based on the treatment guidelines, COVID-19 patients need to be treated in isolated hospitals. Perhaps due to uneducated knowledge about this disease, some people will not accept social isolation and will tend to remain undiagnosed. Undiagnosed patients will be greatly suffering from stressful conditions and will be uncontrollably wanted to suppress the stress may be by abusing drugs to get more resilience [9]. Coping strategies will play an important role in more tolerating the stressful condition and will not exacerbate preexisting addiction [10]. Maybe some addicts can not reveal the addiction and in these individuals, the addiction treatment along with COVID-19 infection will be more complicated. So it would be reasonable to think to have more insight about the disease and avoiding social isolation, which will be of great importance for addiction control in this COVID-19 pandemic.

## Conclusion

Based on above, it is reasonable to avoid social isolation. Also, suppression of inflammation and strengthening the immune system in different ways such as vitamins, anti-inflammation agents, and other immune potentiating agents will help people to control the side-effects of stress.

## Conflict of Interest

The authors declare no potential issue the may be considered a conflict of interest.

## References

1. Sinha R (2008) Chronic stress, drug use, and vulnerability to addiction. *Ann N Y Acad Sci* 1141: 105-130.
2. Stawski RS, Sliwinski MJ, Smyth JM (2006) Stress-related cognitive interference predicts cognitive function in old age. *Psychology and aging* 21(3): 535-544.
3. Georgiou N, Delfabbro P, Balzan R (2020) COVID 19 related conspiracy beliefs and their relationship with perceived stress and pre-existing conspiracy beliefs. *Personality and individual differences* 166: 110201.
4. Greenberg GD, Laman Maharg A, Campi KL, Voigt H, Orr VN, et al. (2014) Sex differences in stress-induced social withdrawal: role of brain derived neurotrophic factor in the bed nucleus of the stria terminalis. *Frontiers in behavioral neuroscience* 7: 200-223.
5. Salari N, Hosseini Far A, Jalali R, Vaisi Raygani A, Rasoulpoor S, et al. (2020) Prevalence of stress, anxiety, depression among the general population during the COVID-19 pandemic: a systematic review and meta-analysis. *Globalization and health* 16(1): 10-57.
6. Crews FT (2012) Immune function genes, genetics, and the neurobiology of addiction. *Alcohol Res* 34(3): 355-361.
7. Schoenbaum G, Shaham Y (2008) The role of orbitofrontal cortex in drug addiction: a review of preclinical studies. *Biol psychiatry* 63(3): 256-262.
8. Eisenberger NI, Berkman ET, Inagaki TK, Rameson LT, Mashal NM, et al. (2010) Inflammation-induced anhedonia: endotoxin reduces ventral striatum responses to reward. *Biol psychiatry* 68(8): 748-754.
9. Bo H X, Li W, Yang Y, Wang Y, Zhang Q, et al. (2020) Posttraumatic stress symptoms and attitude toward crisis mental health services among clinically stable patients with COVID-19 in China. *Psychol Med* 51(6):1052-1053.
10. Sriwilai K, Charoensukmongkol P (2016) Face it, don't Facebook it: impacts of social media addiction on mindfulness, coping strategies and the consequence on emotional exhaustion. *Stress and Health* 32(4): 427-434.

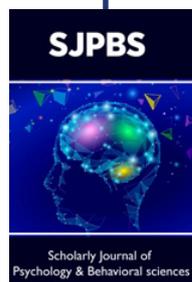


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