

Possible Psychological Consequences in Public of Omicron Variant (B. 1.1. 529) of SARS-CoV-2 Identification in Iran

Omid Karimdadi Sariani¹, Amin Sadeghi Dousari², Majid Taati Moghadam^{3,4*}

1. Department of Genetics, Colleague of Sciences, Kazerun Branch, Islamic Azad University, Kazerun, Iran
2. Jiroft University of Medical Sciences, Jiroft, Iran
3. Department of Microbiology, School of Medicine, Iran University of Medical Sciences, Tehran, Iran
4. Student Research Committee, Iran University of Medical Sciences, Tehran, Iran

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Corresponding Information:

Majid Taati Moghadam, Department of Microbiology, Faculty of Medicine, Iran University of Medical Sciences, Tehran, Iran
Email: Taati Moghadam.m@tak.iuims.ac.ir, Majidtaati1367@gmail.com



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Dear Editor

For the first, Omicron variants (B. 1.1. 529) of SARS-CoV-2 emerged in Botswana and South Africa, which probably compromised vaccine effectiveness and the protective capability of antibodies released via infection of former variants. A study confirmed live Omicron virus still required ACE2 to infect human cells. Public concerns were raised due to abundant mutations in the spike protein and elsewhere on the Omicron variant resulting in an escape from vaccine-elicited immunity. Besides that, multiple mutations in the receptor-binding domain and S2 affect the affinity of viruses for human ACE2 and transmissibility (1). Shortly after introducing this variant, it was identified in different countries of Europe, Asia, and other parts of the world. Some countries such as Japan and Israel, quickly closed their borders to foreign travelers due to fear of this deadly virus. To slow the spread of the variant, the UK government re-enforced the use of the mask in schools, public transport, and shops and quarantined all travelers and people in contact with an Omicron patient for 10 days (2).

The UK has also prioritized boosting vaccines for people under 40 (2). In a study, 96% of Omicron patients were fully vaccinated, which corroborates the variant is more transmissible, and vaccination is probably less effective in preventing Omicron than the Delta variant (3). It has been suggested that although vaccination may have less effect on the Omicron

variant due to antigenically distant from past variants, vaccination should be given in full because sometimes boosting antibodies' quantity can compensate for the lack of match (2). Iranian national media reported that the Omicron variant had been identified in a patient who had traveled to the UAE. This news caused great concern for the people and even the medical staff. After the Delta variant caused widespread deaths and large numbers of hospitalized patients to the point where hospitals could not accept new patients, and the health system was paralyzed. It is now the turn of the Omicron variant to bring many patients to the brink of death. This stressful situation often can cause a wide range of physical and psychological disorders. There is evidence indicating that psychological disorders can enhance the risk of several health conditions, containing viral, bacterial, and parasitic infectious diseases (4-7).

On the other hand, it is presented that social stressors are linked to enhance inflammatory cytokines, which are responsible for the production of central nervous system signals for neurological and behavioral changes along with psychiatric symptoms. Therefore, inflammatory cytokines have been reported to be key factors in psychological disorders (8, 9). Accordingly, the proliferation of T cells, which launch cellular immunity and the most substantial branch of the immune system to cope with viruses, is

decreased in anxious individuals. In addition, stress is related to a delayed response to the vaccine and intensified bacterial and viral infections. On the one hand, stress hormones can disrupt the trafficking of macrophages, neutrophils, natural killer cells, antigen-containing cells, T lymphocytes, and B lymphocytes (5, 10).

On the other hand prevent the development of urgent cytokines from producing immune responses (5, 10). Previous studies have suggested that increased fear, anxiety, and stress are directly related to decreased immune system and incidence of COVID-19 (5, 10). According to the rapid spread of the Omicron variant over Wuhan COVID-19, it is not far-fetched that a decrease in the level of immunity of individuals in public due to fear, anxiety, stress, and depression can lead to an outbreak of the disease, especially in unvaccinated individuals. Therefore, we suggest that the following points be considered in this critical situation where people are psychologically disturbed, and the virus is spreading:

- Psychologists play a vital role in society's mental health in this situation, so we suggested that the national media prepare special programs to control stress, anxiety, and fear caused by the spread of this deadly variant.
- Vaccination of people who has not been done for any reason should be done more quickly to prevent the emergence of new and more deadly variants.

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- Avoid unnecessary accumulations as much as possible so that we do not see the consequent waves of COVID-19 in Iran because the Omicron variant is highly contagious compared to other variants and can disrupt the functioning of the health care system in a short time.
- All people should follow the health protocols proposed by the World Health Organization and prioritize spacing of at least 2 meters. Screening people in busy centers such as airports, terminals, railways, etc., and new cases of Omicron variant should be quickly identified and quarantined.

The guidelines suggested by psychologists and the observation of the above actions for the general public are encouraging and, following the above points as much as possible leads to a reduction in stress, anxiety, and fear. As a result, one of the important factors in reducing the functioning of the immune system will be eliminated.

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Conflict of Interest

The authors declare no conflict of interest.

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